2039

Italian Medium Tanks in action

DON GREER

Armor Number 39

squadron/signal publications

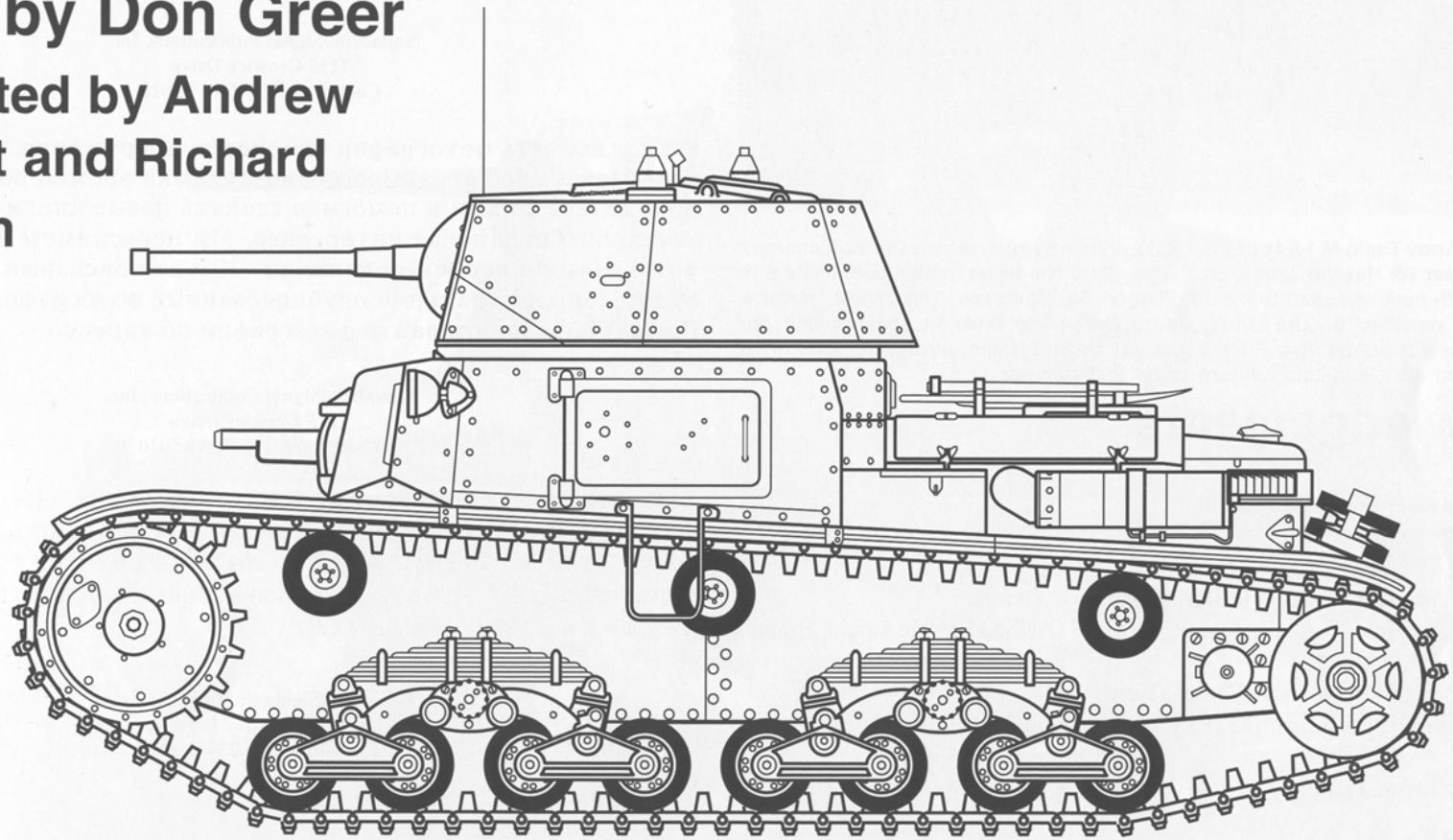
Italian Medium Tanks

By Nicola Pignato

in action

Color by Don Greer

Illustrated by Andrew Probert and Richard Hudson



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A *Carro Armato* (Army Tank) M 14-41 of the 132nd *Ariete* (Ram) Armored Division charges at Got el Ualeb, near Bir Hakeim, Libya, on 1 June 1942. The turret markings indicate this vehicle was the 4th tank assigned to the 1st Platoon, 1st Company. The Division's ram's head insignia is stenciled on the tank's sides. The *Ariete* Division spearheaded the German-Italian assault on the Free French garrison at Bir Hakeim during the Axis drive into Cyrenaica (eastern Libya) and western Egypt that summer.

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Dedication:

To my wife Maria, who always helps me in my research work.

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A Fiat-Ansaldo *Carro Armato* M 13-40 rolls into action in the North African desert during 1942. The crew has placed sandbags on the front hull to provide additional protection against British anti-tank fire. One 8MM Breda Model 38 machine gun was fitted to the turret in front of the commander's upper turret hatch for anti-aircraft use. The three vertical white lines on the turret's colored rectangle indicate this M 13-40's assignment to the 3rd Platoon of an Italian armored company. The white numeral 4 placed beside this rectangle indicated this was the Platoon's 4th tank. (Bundesarchiv)

Introduction

The British introduced tanks into combat on 15 September 1916, late in their Somme Offensive during World War One. The British – soon followed by the French and Germans – deployed tanks in an attempt to break the stalemate of trench warfare on the Western Front in France and Belgium. The mountainous conditions of the Italian Front, where Italy faced Austria-Hungary between 1915 and 1918, were not considered ideal for effectively employing the early tanks. The Italian *Comando Supremo* (High Command) did recognize the potential of these new weapons and acquired a Schneider **C.A.1** medium tank from France in 1917. This vehicle was tested on terrain similar to that found on the Italian Front.

The Italians planned to purchase a limited number of tanks; however, Italy's defeat at the Battle of Caporetto (24 October-12 November 1917) and the subsequent retreat to northern Italy's Piave River halted tank procurement for the time being. A French Renault **FT** was delivered to the *Regio Esercito* (Royal Italian Army) in July of 1918, followed immediately by three others from France. An order was placed at that time with Fiat for 1400 license-built FTs for completion by May of 1919. Only 100 Fiat-built FTs were completed when World War One ended, and the remaining order was cancelled.

Italy's only domestically designed tank of the conflict was the 44.1 ton (40 metric ton) **Fiat 2000 Model 17**. This box-shaped vehicle was protected with 20MM armor plating and was armed with one 65MM gun and seven 6.5MM Fiat-Revelli Model 14 machine guns. The Fiat 2000 was powered by a 250 horsepower (HP) Fiat A12 engine, which gave it a maximum speed of 3.7 MPH (6 KMH). The first example was delivered to the *Regio Esercito* in June of 1918; however, further Fiat 2000 production was cancelled upon Austria-Hungary's surrender on 4 November 1918.

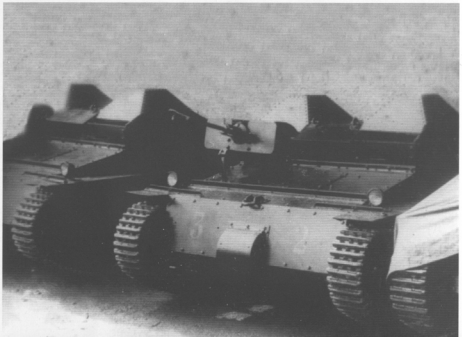
An armored unit equipped with Fiat 3000A and Fiat 3000B tanks parades near Perugia, Italy on 27 August 1932, following that year's Royal Italian Army War Games. The Fiat 3000 was the license-built French Renault FT tank. The Fiat 3000A was armed with two 6.5MM turret-mounted machine guns, while the Fiat 3000B had one 37MM gun in its turret.

One of the Renault FTs was converted into a 105MM self-propelled gun after World War One ended. This vehicle, the other three French-built FTs, and the Fiat 2000 were used for training until 1923. The first of 100 **Fiat 3000**s – an improved Italian-built FT – were delivered that year. The *Regio Esercito* raised its first tank regiment in 1927, which was equipped with 50 Fiat 3000s. Some of these tanks were armed with 37MM Vickers guns. Italy added to its growing armored force by purchasing four **Carden Loyd Mk VI** tankettes from Britain in 1929. Artillery manufacturer OTO built 21 examples designated **CV 29** (*Carro Veloce;* Fast Tank, 1929) under license in 1930. During the same year, Fiat-Ansaldo developed a new tankette, the **CV 3** (*Carro Veloce*, 3 MT/3.3 tons), which was was armed with one 6.5MM Fiat-Revelli Model 14 machine gun. The CV 3 evolved into the **L 3/33-35** (*Leggero*, light, 3 MT, standardized in 1933 and modified in 1935), which was armed with two gimbal (pivot)-mounted 8MM Breda Model 38 machine guns. Approximately 2000 CV 3s and L 3/33-35s were delivered to the Royal Italian Army and export customers. These vehicles included radio-equipped command, flame-thrower, and bridgelayer variants. The CV 3 and L 3/33-35 tankettes saw action in the Italian invasion of Ethiopia (Abyssinia) in 1935-36, with the Nationalists in the Spanish Civil War of 1936-39, and in Italy's conquest of Albania in 1939.

Fiat-Ansaldo also built two medium tank prototypes in the early 1930s. The smaller of the two vehicles led to the **L 6** (light, 6 MT/6.6 ton) tank of 1935. This tank was originally armed with a short-barreled 37MM Vickers-Terni 21-caliber* gun, which was later replaced with a 20MM Breda cannon. The L 6 was issued to Italian reconnaissance units during World War Two. Fiat-Ansaldo's other medium tank prototype was the *carro di rottura* (breakthrough tank), which debuted in 1932 and evolved into the **8 T** (later designated **M 11-39**) of 1937.

*Caliber referred to the gun barrel's length in terms of its bore, or diameter. For example, a 37MM/21-caliber gun had a barrel length of 37MM times 21 = 777MM, or 30.6 inches.

CV 29s – Italian-built Carden Loyd Mk VI tankettes – are parked at their base during the early 1930s. This vehicle was equipped with one pintel-mounted 6.5MM Fiat AV (*Aviation,* air-cooled) machine gun on the upper hull. The front hull numbers indicated 3rd Company, 2nd tank in the Company.



The term M tanks does not mean Italian leader Benito Mussolini's tanks, as someone has written; instead, M stood for *Medio* (medium). In 1938, the *Regio Esercito* regarded M tanks as vehicles weighing from 5.5 to 16.5 tons (five to 15 MT). The Royal Italian Army changed the lower weight limit to 8.8 tons (8 MT) in 1940. Military experts still wonder why Italy considered tanks in this weight class as medium when other countries regarded these as light tanks.

During the late 1930s, the Italian government considered itself satisfied with the conquest of Ethiopia in 1936 and the results of the Spanish Civil War. This period marked a return for Italy to its defensive policy of the early 1930s. Britain and France in the Mediterranean were seen as major threats, along with Yugoslavia towards the East. Germany – even though Italy's Axis partner – remained a potential enemy. Italy began a limited tank re-equipment program by 1938. Italian mechanized warfare differed only in details from the armored doctrine practiced in other countries.

Italy's economic and geographic considerations limited the extent of its armored doctrine and required smaller vehicles. This resulted in the *Regio Esercito*'s requirement for a lighter tank than its rivals, leading to the M 11-39 ordered in 1938. Ansaldo designed this 12.1 ton (11 MT) tank – which appeared too late for evaluation during the Spanish Civil War – to operate in the Carso mountainous region north of Trieste, where much of Italy's World War One fighting took place. The Italian General Staff believed that the Italian Empire's other regions – including North Africa – were unsuitable for armored warfare. The M 11-39 *carro di rottura* (breakthrough tank) was armed with a 37MM cannon low in the starboard front hull and a fully-traversing machine gun turret for use against enemy troops.

In 1939, the *Regio Esercito* transformed two of its armored brigades into armored divisions. The 2nd Armored Brigade became the 132nd Armored Division on 1 February; it was named *Ariete* (Ram) on 8 April. The 1st Armored Brigade became the 131st *Centauro* (Centaur) Armored Division on 20 April 1939. A third armored division, the 133rd *Littorio* (Fasces, the emblem of Fascism), was raised in 1939 and named after a distinguished assault infantry division sent to support the Nationalists during the Spanish Civil War. All three Italian armored divisions were temporarily equipped with L 3 tankettes, pending delivery of M 11-39 tanks.

Italian tank technology lagged behind the other major powers by the beginning of World War Two on 1 September 1939. The *Regio Esercito*'s tanks were underpowered and had light armament compared to German, French, and British tanks. Lack of radio equipment adversely affected the command and control of Italian armored formations. The low quality of steel used on tanks resulted in the armor plate being brittle when hit by light anti-tank weapons. Cast and welded hulls and turrets had greater strength and were easier to build; however, the country's lack of large-scale casting facilities meant that Italian tanks were often riveted together. According to some sources, crews of riveted vehicles were exposed to ricocheting rivets when the armor was hit in combat. Italy's limited industrial capacity also resulted in low production rates for tanks, reaching a peak of 65 vehicles a month during the war.

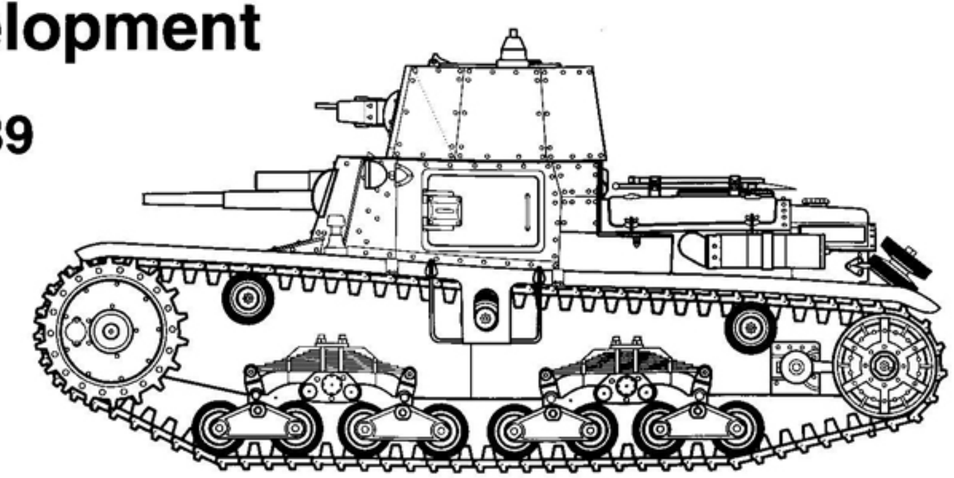
In late 1939, the success of Germany's Panzer (armored) divisions against the Polish Army prompted the Italians to order a new tank armed with a turret-mounted cannon. This new tank was the **M 13-40**, which entered service in 1940. Studies for a P (*Pesante*, heavy) tank – an enlarged M tank armed with a turret-mounted 75MM gun – began only in the summer of 1940. Such a vehicle would not be ready for production until September of 1943. During the Summer of 1941, the Italians adopted a stop-gap measure of mounting 75MM guns on modified M tank chassis. This successful pairing resulted in the *Semovente* (self-propelled) series of assault guns, beginning with the ***Semovente da* 75/18** of 1941.

A company of Fiat-Ansaldo L 3/33-35 tankettes pass the Coliseum while traveling on the *Via Triumphalis* in Rome on 6 May 1938. These vehicles were reviewed by visiting German *Führer* (Leader) Adolf Hitler as part of a parade staged by Italian *Duce* (Leader) Benito Mussolini. The L 3/33-35 commanders stood up while their drivers sat inside the tankettes.

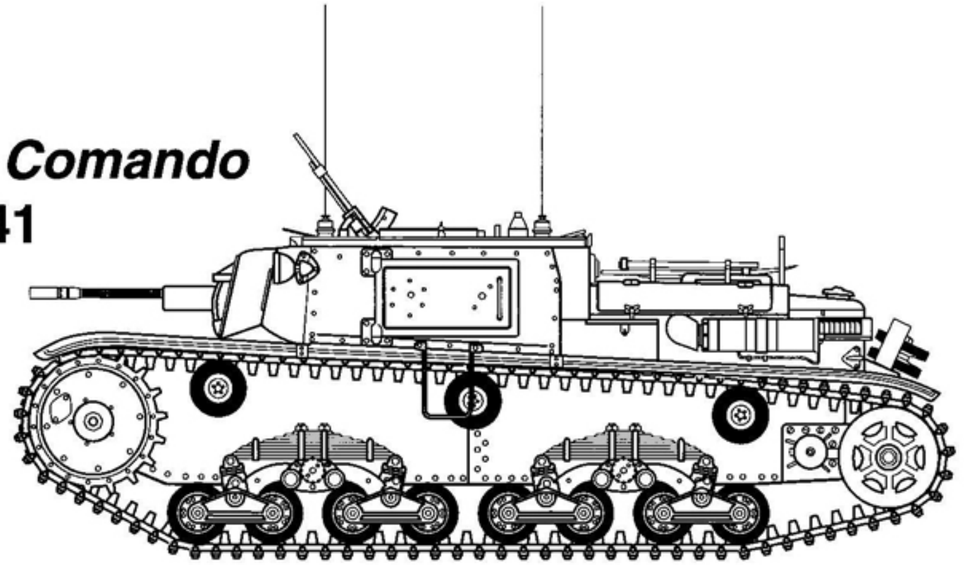
One of the final Fiat 3000As (RoE TO 1082) participates in war games in northwest Italy's Piedmont region in August of 1939. This vehicle was retrofitted with two 8MM Breda Model 38 machine guns in the turret. An L 3-35 flame thrower variant travels along the road past the Fiat 3000A.

Development

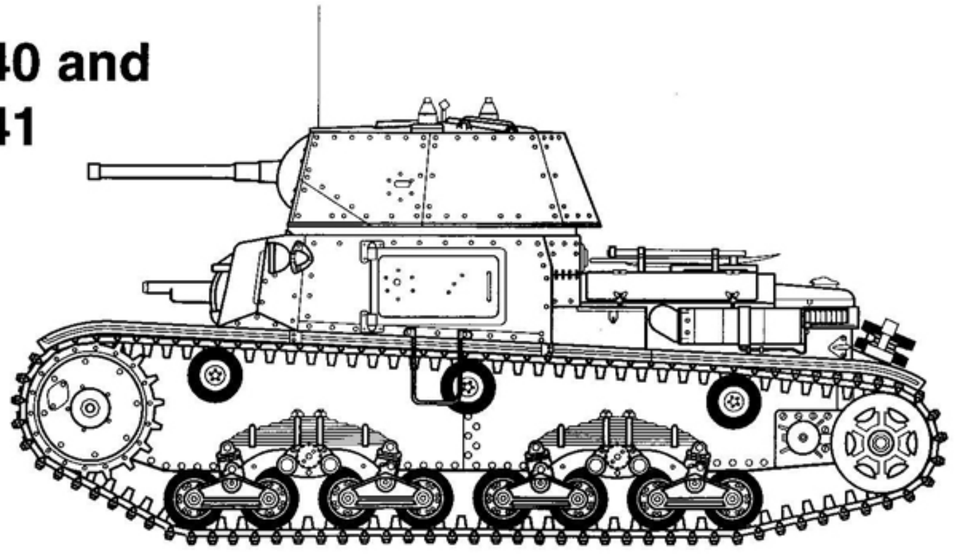
M 11-39



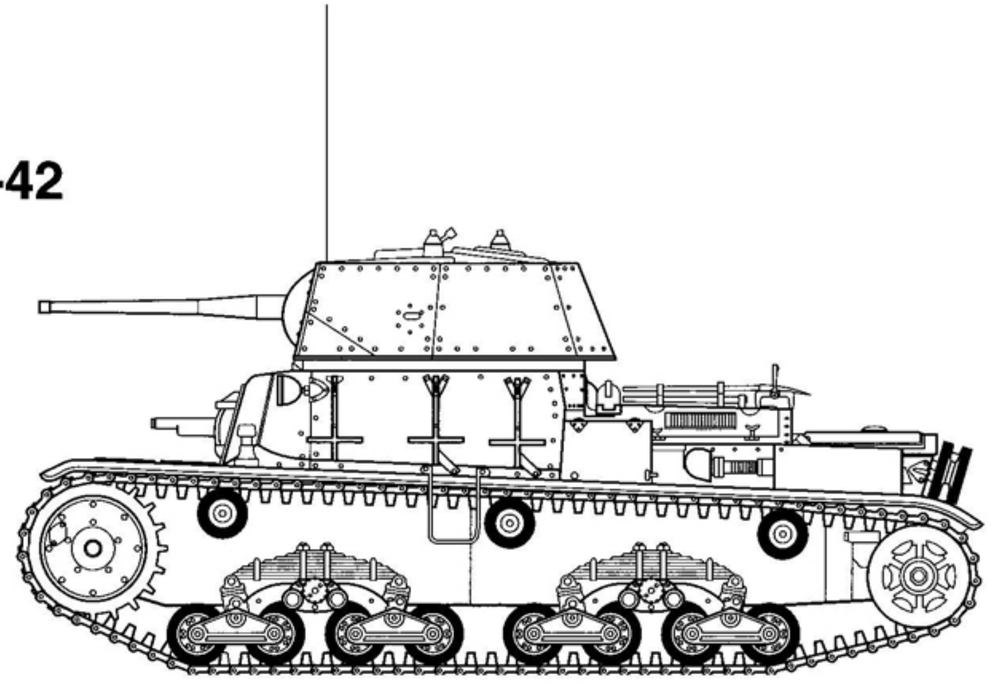
Carro Comando
M 14-41



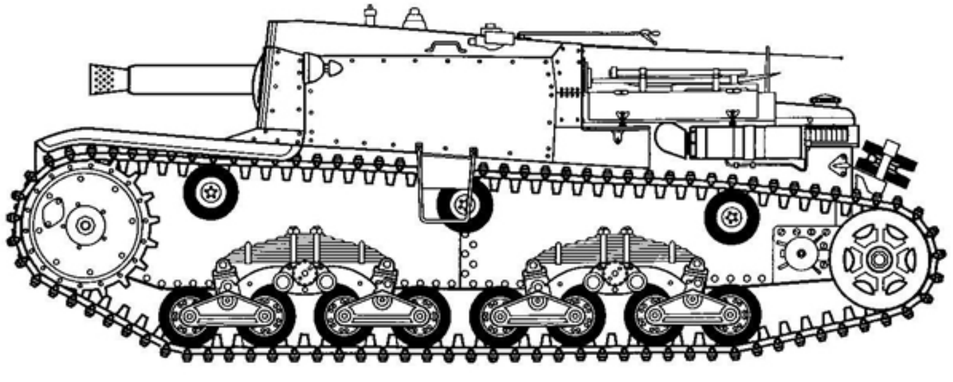
M 13-40 and
M 14-41



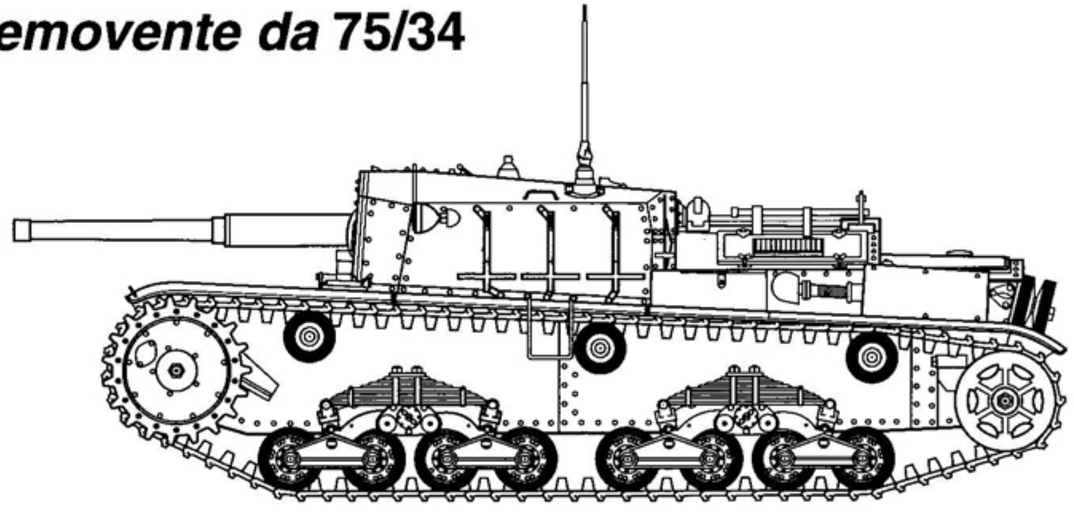
M 15-42



***Semovente da* 75/18**



***Semovente da* 75/34**



M 11-39 Tank

The Fiat-Ansaldo *Carro Armato* (Army Tank) M 11-39 was the first M series tank for the *Regio Esercito* (Royal Italian Army). The prototype was built in 1937 and the vehicle was adopted for service the following year. A company of the 32nd Tank Regiment, *Ariete* Armored Division, tested the first M 11-39 production batch in August of 1939. The remaining vehicles from the order for 100 M 11-39s were produced at a rate of nine per month through the Spring of 1940. These tanks were used to equip two battalions (each consisting of two companies) of the *Ariete* Division, while the remaining 24 M 11-39s were deployed to Italian East Africa (Ethiopia, Eritrea, and Italian Somaliland).

The M 11-39 was powered by a 125 HP Fiat SPA 8T diesel V-8 engine, which sent power to the two drive sprockets at the front of each set of running gear. The suspension for this and subsequent M tanks consisted of four double wheeled articulated bogies, which were paired into two bogie assemblies. The assemblies were carried on semi-elliptical leaf springs and were based on the springs fitted to the British Vickers 6 ton (5.4 MT) tank of the late 1920s. The steel track was fed around the bogies, the front-mounted drive sprockets, the three upper track support rollers, and the rear adjustable idler wheels. Two spare bogie wheels were fitted to the M 11-39's rear hull and the wheel jack was carried on the port front fender. The M 11-39's fuel capacity was 38.3 gallons (145 L) in its main fuel tank and 9.2 gallons (35 L) in its reserve tank.

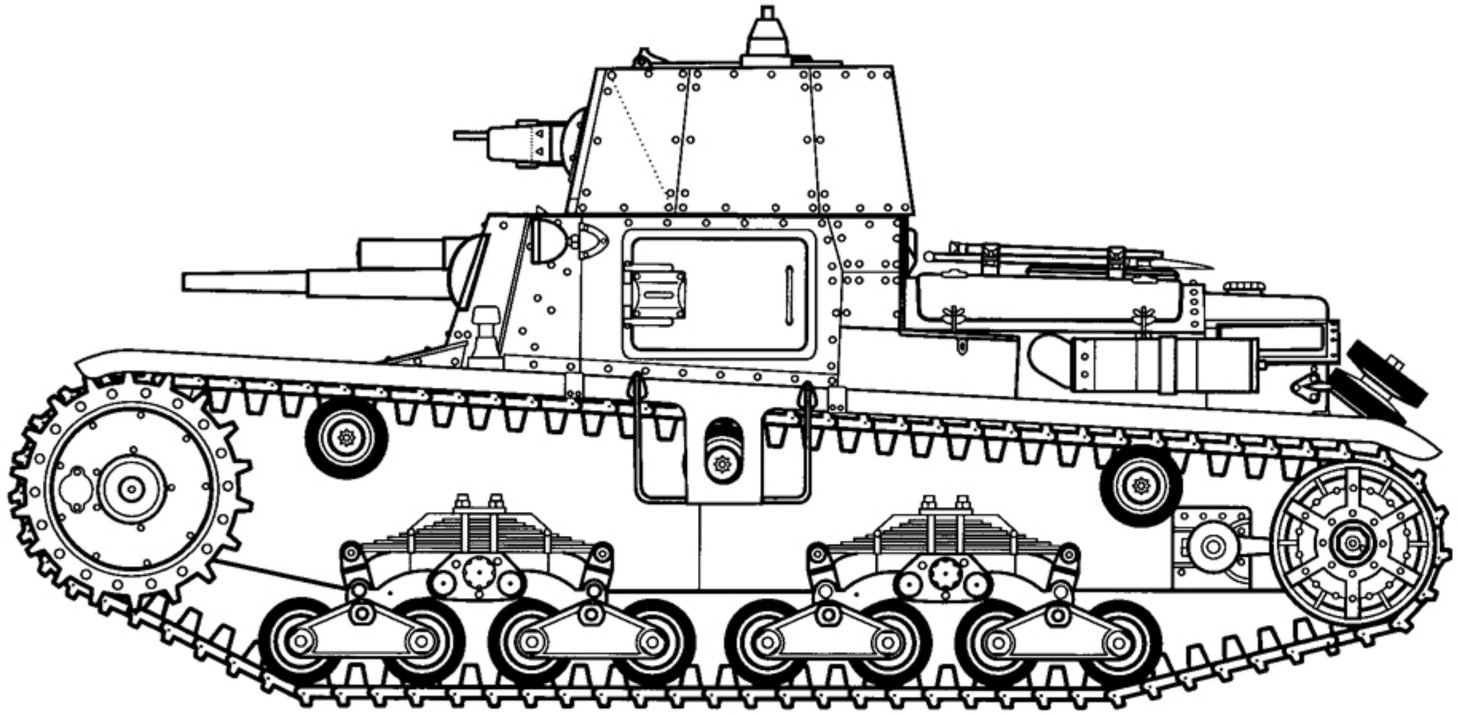
This new tank was armed with a 37MM Vickers-Terni L 40 gun fitted to the right front hull. The weapon had a traverse of 15° to port or starboard and an elevation of +/-12°. The main gun mount was fitted with limited hydraulic power in traverse and a telescopic sight. The M 11-39 carried 84 rounds of 37MM ammunition. The turret was equipped with two 8MM Breda Model 38 machine guns in a cast gimbal (pivot) mount, in which both guns elevated or depressed simultaneously. This turret had full 360° traverse and included a telescopic gunsight and a roof-mounted periscope. The tank was supplied with 2808 rounds of 8MM ammunition in box magazines. An oval pistol port was fitted to both the port and starboard sides of the hull superstructure. These ports allowed crewmen to fire their sidearms from inside the vehicle. Two more ports were fitted to the aft right superstructure. The M 11-39 had bolted-on armor plating ranging in thickness from 7MM (0.3 inch) up to 30MM (1.2 inches), which was designed to protect the vehicle's crew from 20MM fire.

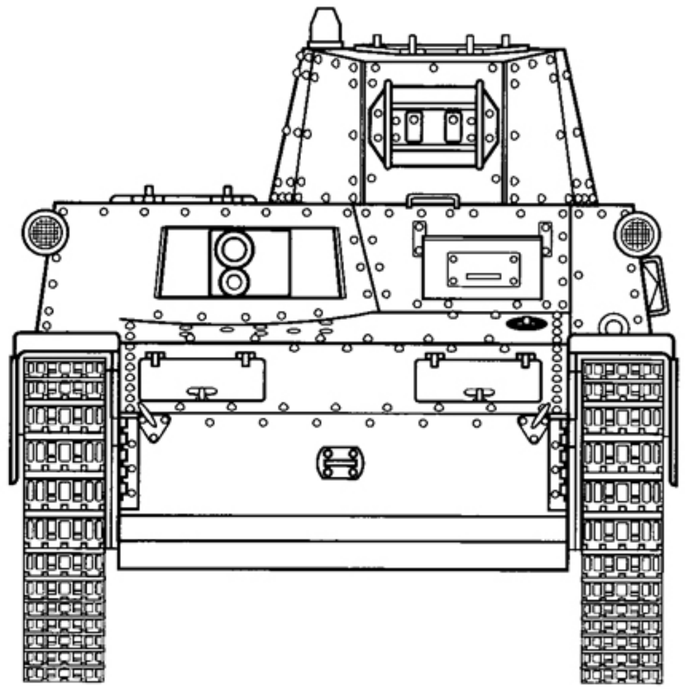
The M 11-39 had a crew of three: commander/turret gunner, 37MM gunner, and driver. Access to the tank was through a left side door, a hatch above the main gun mount, and the turret hatch. The prototype was equipped with an RF 1 CA radio set; however, this radio was not fitted to production examples. Production M 11-39s differed from the prototype only in lacking a radio and in having slightly different front fenders. The M 11-39's internal layout consisted of a driver's compartment in the left front hull, fighting compartments in the right front and center, and the engine compartment in the rear. Armor plates were bolted or riveted onto the steel framework, with a bulkhead separating the engine compartment from the rest of the vehicle. Air intakes for the driving and fighting compartments were placed in the rear superstructure, under the rear turret. Two radiator outlet grills were located immediately aft of the engine compartment.

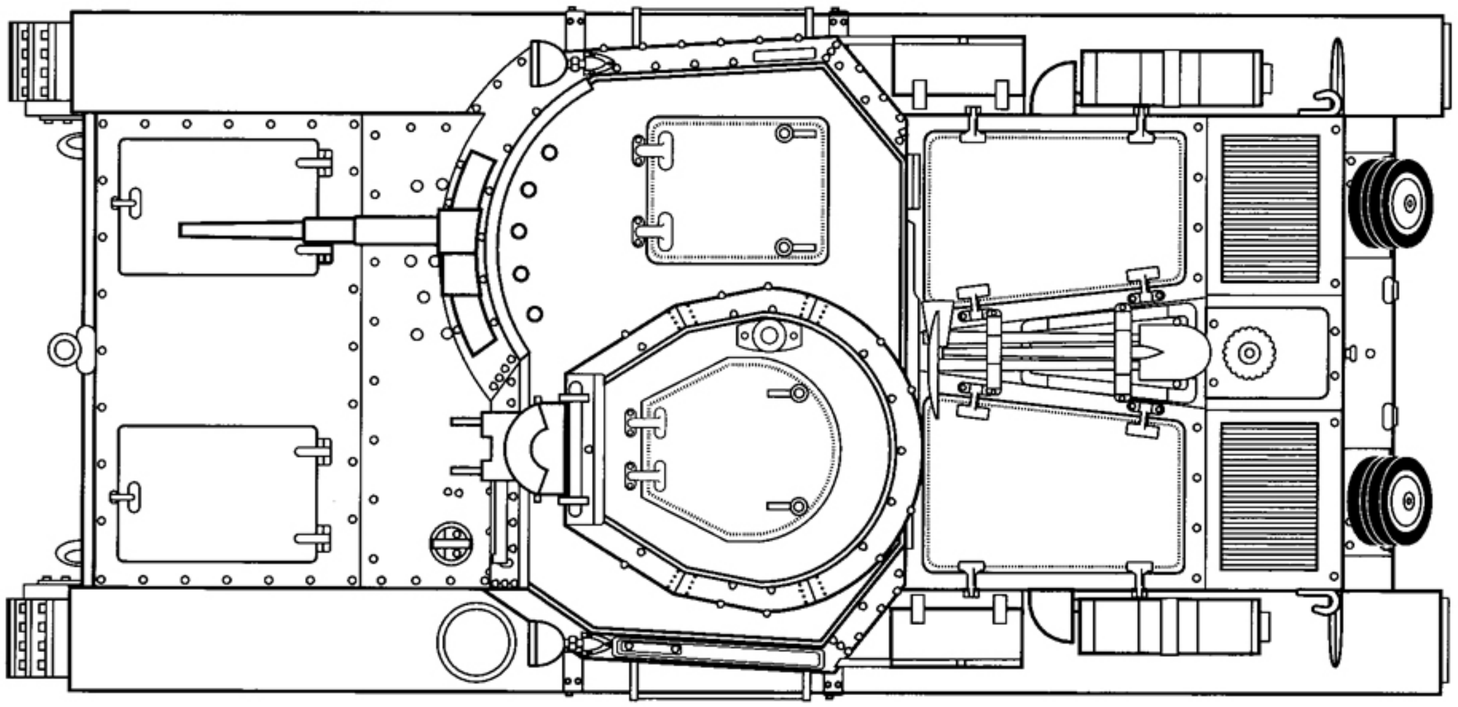
The *Regio Esercito* deployed 72 M 11-39s to Libya in early July of 1940, although these vehicles were never tested under tropical conditions. These tanks were not employed *"offensively, in mass and by surprise"* as stated in the *Regio Esercito* regulations; instead, the M 11-39s were sent piecemeal in improvised columns against the British forces in Egypt. The Italian tank's drawbacks – lack of radio equipment and hull-mounted main gun armament –

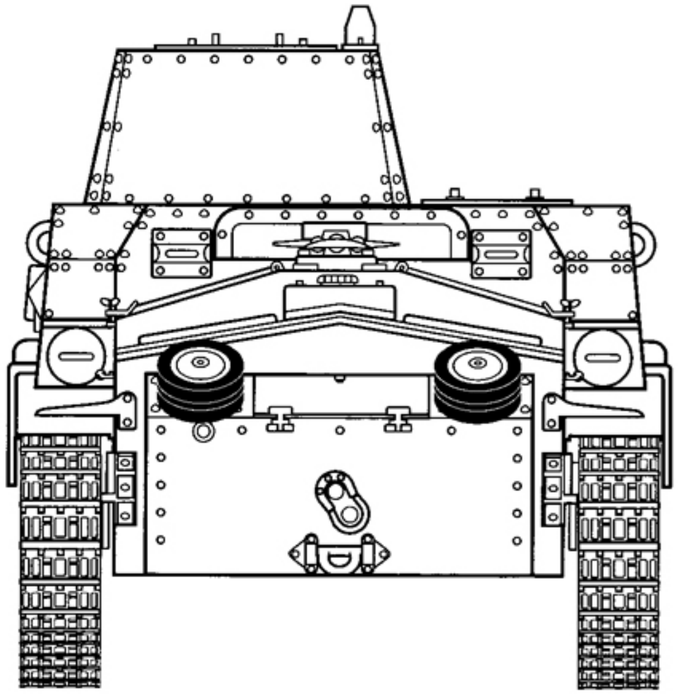
The Fiat-Ansaldo 8 T prototype performs mobility tests on difficult terrain in 1937. This tank (redesignated M 11-39 in 1939) had a ground clearance of 1.3 feet (.41 M). The two turret-mounted 8MM Breda Model 38 machine guns were pointed downward while the M 11-39 climbed up this slight hill. (AUSSME)

An M 11-39 rests between actions during the Royal Italian Army's War Games held in the Piedmont region of northwest Italy on 11-16 August 1939. This vehicle was assigned to the first company equipped with the new M tank. Foreign military attachés standing on the hill observed the Italian maneuvers for their respective governments.





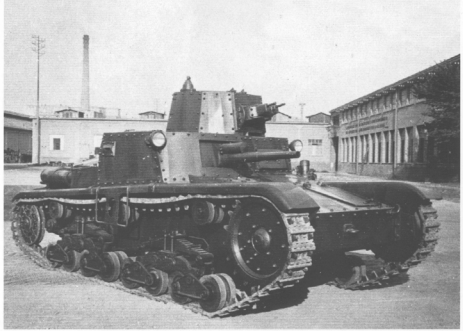




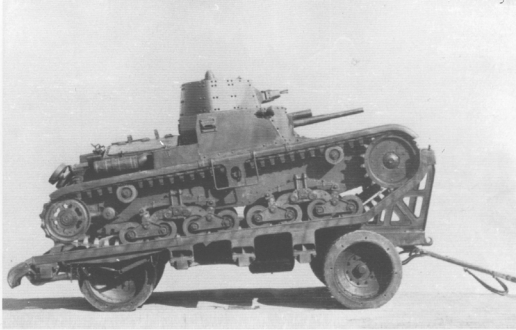
Fiat-Ansaldo *Carro Armato* M 11-39 Specifications

Length:.....15 feet 10.9 inches (4.85 M)
Width:.....7 feet 1.8 inches (2.18 M)
Height:.....6 feet 11.1 inches (2.11 M)
Combat Weight:..24,250.4 pounds (11,000 KG)
Powerplant:.....One 125 HP Fiat SPA 8T liquid-cooled, V-8, diesel engine

Armament:.....One 37MM Vickers-Terni L 40 gun in hull with 84 rounds; two 8MM Breda Model 38 machine guns in turret with 2808 rounds
Maximum Speed:.....19.9 MPH (32 KMH)
Maximum Range:.....130.5 miles (210 KM)
Crew:.....Three



The pilot model of the *Carro Armato* (Army Tank) M 11-39 is parked at the Ansaldo-Fossati Works in Genoa, Italy in July of 1939. This tank was painted overall Red-Brown (FS20100) with vertical Gray-Green (FS34159) bands. No markings were applied to this M 11-39, indicating this vehicle was not assigned to a *Regio Esercito* (Royal Italian Army) unit. (Rosini)



The M 11-39 prototype was driven onto the Strafurini trailer, which was used for transporting M tanks before and after self-deployment. This twin-axle trailer weighed 10,890.6 pounds (4940 kg) empty and could carry tanks weighing up to 15.4 tons (14 metric tons). The Strafurini trailer was towed by the Lancia 3/Ro truck. (AUSSME)

soon appeared under the test of combat. The British tanks were radio equipped and had their main guns in turret mounts. The Italian units brought their radios along the armored columns in motorcycles fitted with sidecars, which reduced the units' operational flexibility in comparison to the British forces. The Italians also lacked recovery vehicles and personnel skilled in making major after-battle repairs of tanks.

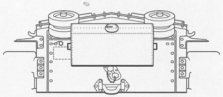
The Italians formed a Special Armored Brigade after capturing Sidi Barrani, Egypt in November of 1940. This Brigade's main strength was the two M 11-39-equipped battalions, which were complimented by a battalion of the newer M 13-40 tanks, and two L (light) tank battalions. The Special Armored Brigade was never at full strength and all its tanks were lost during the British counter offensive (Operation COMPASS) in December of 1940.

The M 11-39 companies in Italian East Africa fared better in skirmishes with British forces; however, they lost their effectiveness during the long campaign due to mechanical wear and spare parts shortages. The M tanks in Eritrea (12) and Somalia (12) were gradually lost due to the extent of operations and lack of spare parts by the spring of 1941.

The M 11-39 production model differed from the prototype only in lacking a radio and having slightly modified fenders. The bracket under the side hatch was a crew access step. The Gray-Green camouflage color was sprayed in streaks on the Red-Brown base, rather than applied in straight edged vertical stripes as on the pilot model. (AUSSME)

6.1 Gallon (23 L) External Fuel Tank

(Fitted to Back of Some M 11-39s during the Italian Advance into Egypt in late 1940)



This production M 11-39 maneuvers over rocky terrain during exercises in Italy. The hull-mounted 37MM gun had a traverse of only 15˚ to left or right and this was considered a serious drawback in combat against tanks with turret-mounted main guns. The two 8MM machine guns – ineffective against tanks – were fitted to a turret with full 360˚ traverse.

The M 11-39 was powered by a 125 HP Fiat SPA 8T diesel engine mounted in the tank's aft compartment. Engine access was through two large upward-sloping doors on the engine deck. Cylindrical exhaust mufflers were located above the rear fenders. Two spare double wheel bogies for the M 11-39's running gear were placed on the hull rear. This production M 11-39 had the vertical cut inside mudguard placed beside the rear idler wheel.

A PAI (*Polizia dell'Africa Italiana*; Italian Africa Police) motorcyclist brings his blue Guzzi 500 motorcycle alongside an M 11-39 in Libya in July of 1940. This tank was assigned to the 1st Medium Tank Battalion in the Italian colony. The M 11-39's driver has opened the side hatch to speak with the PAI motorcyclist. (B. Pafi)

A 1st Battalion M 11-39 passes a Lancia 3/Ro truck while heading towards the Egyptian border during the fall of 1940. The tank was painted in a new desert camouflage of Yellow Sand (FS20260) and Gray-Green (FS34159). An identification band striped (from top) red, white, and green was painted on the turret back (LUCE)

A M 11-39 column advances in Egypt's Western Desert during the Italian offensive in the fall of 1940. The hull gunners are standing up in all but the lead tank in this column. Rolling through the sandy desert terrain resulted in the vehicles becoming coated with dust, which lightened the tank's exterior coloring. (LUCE)

An M 11-39 waits in ambush for invading British forces in Italian East Africa during early 1941. The Italians deployed 24 M 11-39s to bolster their forces in Ethiopia, Eritrea, and Italian Somaliland in mid-1940. These tanks were used in Italy's attack on British Somaliland in August of 1940 and against the subsequent British offensives. The last Italian troops in East Africa surrendered on 27 November 1941.

M 11-39s of the 1st Battalion advance on Sidi Barrani, Egypt in September of 1940. These tanks are believed to have been assigned to the Battalion's 1st Company, which used red rectangle company markings. Italian troops captured Sidi Barrani on 16 September 1940, only to lose the town to the British on 3 January 1941. (LUCE)

The driver and main gunner look out from the port hatch of an M 11-39 in the North African desert. The commander/machine gunner was in the turret. The M 11-39's front armor of 30MM was deemed adequate; however, her side armor measured only 15MM and the hull top and floor were protected by 6MM armor plate. A jack was installed on the left fender for repairs in the field.

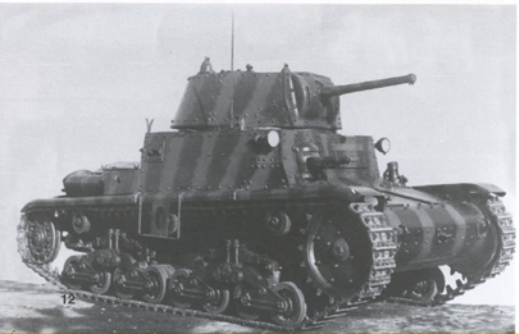
M 13-40 Tank

The *Regio Esercito* (Royal Italian Army) authorized the *Carro Armato* (Army Tank) M 13-40 prototype in December of 1937. Ansaldo delivered the prototype to the *Regio Esercito* in October of 1939; however, this tank was not accepted for service until March of 1940. The *Regio Esercito* ordered 538 M 13-40s, which began production in June of 1940. This vehicle had a heavier turret and main armament compared to the previous M 11-39. The new tank required more construction time, resulting in a production rate of 22 M 13-40s per month.

The M 13-40 was armed with a semi-automatic 47MM Ansaldo 47/32-caliber gun in the fully traversing turret. The main gun's elevation ranged from -10˚ to +20˚. An 8MM Breda Model 38 machine gun was mounted coaxial with the 47MM main gun, while a second 8MM weapon could be mounted in front of the roof hatches for anti-aircraft use. The turret gun slots were open, which increased the risk of bullet splash into the turret. (Bullet splash results when an intact bullet or bullet fragment ricochets after impact.) A telescopic gunsight was also fitted to the turret, along with the option for either manual or pedal firing of the 47MM weapon. The turret employed a hydraulic traversing system with manual backup. Two periscopes for exterior vision were placed on the turret roof. Oval pistol ports were fitted to the port and starboard turret sides to allow crewmen to use their sidearms from inside the vehicle. The prototype's turret was also equipped with a rear pistol port, which was deleted on production M 13-40s.

Two circular pistol ports were fitted to the hull superstructure sides and two additional ports were fitted to the superstructure rear. Two additional 8MM machine guns were placed in a gimbal mount on the right front superstructure. These weapons had a total traverse of 30˚ – 15˚ each to left and right. The M 13-40 carried 104 rounds of 37MM ammunition (70 in the hull and 34 in the turret) and 2832 rounds of 8MM ammunition.

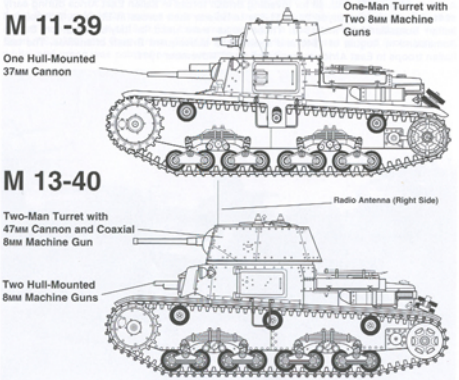
The M 13-40 tank prototype was completed in December of 1939. This tank retained the M 11-39's suspension, with four double-wheeled bogies on each side. The larger turret included a 47MM main gun and coaxial 8MM machine gun. The twin 8MM machine gun mounting in the right front hull was gimbaled to allow 15˚ traverse to left or right. The antenna placed beside the turret indicated that an RF 1 CA radio set was installed.



The M 13-40 retained the M 11-39's internal layout, but with slightly increased armor protection. The M 13-40's armor ranged in thickness from 9MM (0.4 in) to 40MM (1.6 in); however, the armor tended to crack when hit by gunfire due to the steel's inferior quality. The M 13-40 featured a rounded front hull instead of the M 11-39's flat surface. Towing pintles were fitted to the front and rear of the tank, with a towing hook also placed on the aft end.

This new tank was powered by a 125 HP Fiat SPA 8T V-type 8-cylinder, liquid cooled diesel engine. The powerplant could be started electrically or using an inertia starter. Power from the 8T engine was sent through the transmission to the two drive sprockets in the vehicle's front. This transmission incorporated the steering and braking gear used to control the tank. A reduction gear was also placed in the vehicle's front to reduce engine revolutions to a more manageable speed for the drive sprockets. This tank was crewed by four men: the commander/gunner and the loader were inside the turret, while the front machine gunner and the driver were in the forward hull. Fuel capacity remained the same as the earlier M 11-39: the main fuel tank held 38.3 gallons (145 L), while the reserve tank's capacity was 9.2 gallons (35 L).

The Italians deployed three battalions of the new M 13-40 tanks to Libya in October of 1940. Two months later, all of these tanks were lost in the British offensive against Italian forces in western Egypt. A former Italian tank regiment commander said the M 13-40 had good maneuverability, an accurate 47MM gun, effective optical equipment (gunsight and periscopes) for external vision, and good crew habitability. The tank's armor was sufficiently thick, but lacked tensile strength. The modestly fuel efficient diesel engine did not easily catch fire when hit by gunfire; however, the engine 's lack of power made the M 13-40 an underpowered vehicle. The vehicle's low speed over uneven ground and slopes made the tank vulnerable. The British captured several M 13-40s during the 1940 offensive and observed that this vehicle's main failures

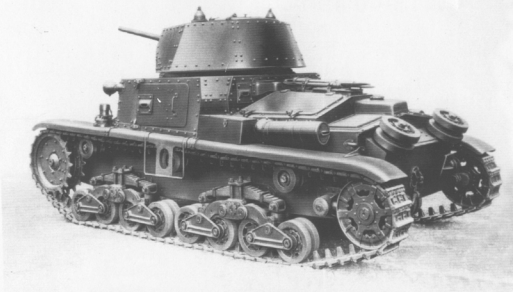

M 11-39
One-Man Turret with Two 8MM Machine Guns
One Hull-Mounted 37MM Cannon
M 13-40
Radio Antenna (Right Side)
Two-Man Turret with 47MM Cannon and Coaxial 8MM Machine Gun
Two Hull-Mounted 8MM Machine Guns

were its poor bullet splash protection and its light armor. These drawbacks were made worse by poor training for Italian tank crews during 1940, when they received only 25 days and two driving hours before going into combat. The Italian tanks were also made ineffective by inept leadership in the field.

The 1942 *Regio Esercito* regulations allowed tank battalions to use one of two combat formations for its three companies. The first formation was used for a breakthrough action, in which one company was assigned for each attack wave. This was employed on a front of 2.5 to 3.1 miles (4 to 5 KM), with a depth of 984.3 to 1203 yards (900 to 1100 M). The second armored formation was used for actions in depth. Each five-tank platoon usually adopted a wedge formation, each tank separated by 11 yards (10.2 M), with the third line 22 yards (20.1 M) from the lead tank in the formation.

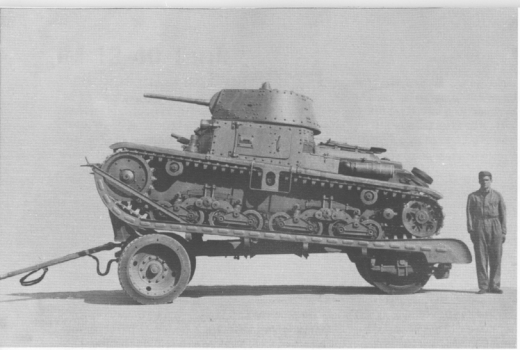
The M 13-40s sent to North Africa in late 1940 suffered from considerable mechanical breakdowns, often due to the lack of sand filters for the air intakes. These issues were addressed during production. Main ammunition storage inside the hull was reduced from 70 rounds to 53 in a weight-saving measure. Sand shields were added to the turret face and a more powerful diesel engine was installed. The increased engine power was offset by the crews' adding more equipment on the tank's exterior. These items included rear engine cover ammunition boxes, 5.3 gallon (20 L) fuel and water containers (jerrycans) on the sides, and spare track links and sandbags for additional frontal protection. The additional equipment covered the brake ventilation hatches on the M 13-40's front glacis plate and increased the time needed to open the engine inspection hatches on the aft hull. Some M 13-40 crews removed the turret power traverse system, which they considered unnecessary and took up valuable space inside the fighting compartment.

The M 13-40 prototype was painted Red-Brown (FS20100) with Gray-Green (FS34159) vertical stripes. This vehicle had a two-part hull nose plate, while production M 13-40s used a one-piece nose plate. The driver's front plate included a vision slit. Headlights mounted on the upper hull were used for night driving, although these unmasked lights would give the tank's presence away to the enemy. (AUSSME)



The M 13-40's rear hull was similar in appearance to that of the earlier M 11-39 tank; however, the M 13-40 was some four inches (1.2 CM) wider than its predecessor. Pioneer (US=engineer) tools – including a shovel, pick, and crowbar – were fitted aft of the turret and between the engine doors.

The split turret hatches are opened on the prototype M 13-40. An 8MM Breda Model 38 machine gun was fitted to the turret roof for use against low-flying aircraft. This feature was not always used by M 13-40s in service. The prototype was not equipped with a radio set, which was installed on late production models. (AUSSME)



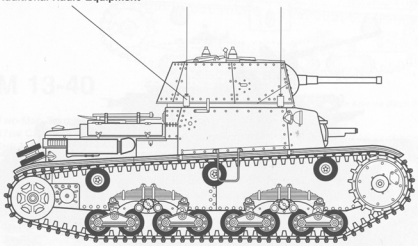
The M 13-40 prototype was placed aboard a Viberti tank recovery trailer. This trailer – towed by a Lancia 3/Ro truck – reduced wear on the tank's running gear when it was transported to and from combat zones. The recovery trailer was produced both by Viberti of Turin and Bartoletti of Forli.

A chaplain uses the bow of an M 13-40 to conduct a field worship service at Marsa Lucch, Libya in November of 1940. This M 13-40 was one of the few radio-equipped tanks available to the Italian forces. The red and blue rectangle on the turret side with white Roman numeral III indicates this tank was the command vehicle of the III (3rd) Battalion, Special Armored Brigade. (Ponce de Leon)

The III Tank Battalion, Special Armored Brigade was the first M 13-40 unit deployed to North Africa. One of the Battalion's tanks rolls through Bengasi, Libya on 8 September 1940. The M 13-40 featured improved protection over the previous M 11-39, with 37MM armor on the turret front and gun mantlet and 25MM armor on the sides. (Ponce de Leon)

M 13-40 *Centro Radio*

Second Radio Antenna for
Additional Radio Equipment



Maresciallo d'Italia **(Marshal) Rodolfo Graziani, commander of the Italian forces in North Africa, lost all of his M tank battalions to the British offensive launched on 6 December 1940. This M 13-40 was one of many captured by the British Commonwealth forces during their first North African offensive. The Australians painted large white kangaroos on these Gray-Green (FS34159) tanks to prevent 'friendly fire' incidents. This tank was abandoned by the Australians and recovered by the advancing Italians in Libya in early 1941. (LUCE, via Cappellano)**

The M 13-40 *Centro Radio* (Radio Center) command tank was fitted with an RF 2 CA radio set. Two radio-equipped tanks were assigned to each tank battalion headquarters. Regular M 13-40s did not receive radios until RF 1 CA radios were fitted to later production machines assigned to the 7th Tank Battalion during 1941.

The M 13-40 and later M tanks were transported to and from combat zones on a two-axle trailer developed by Viberti of Turin. This trailer weighed 13.2 tons (12 MT) when loaded with the tank and was towed by the 6.2 ton (5.6 MT) Lancia 3/Ro military truck.

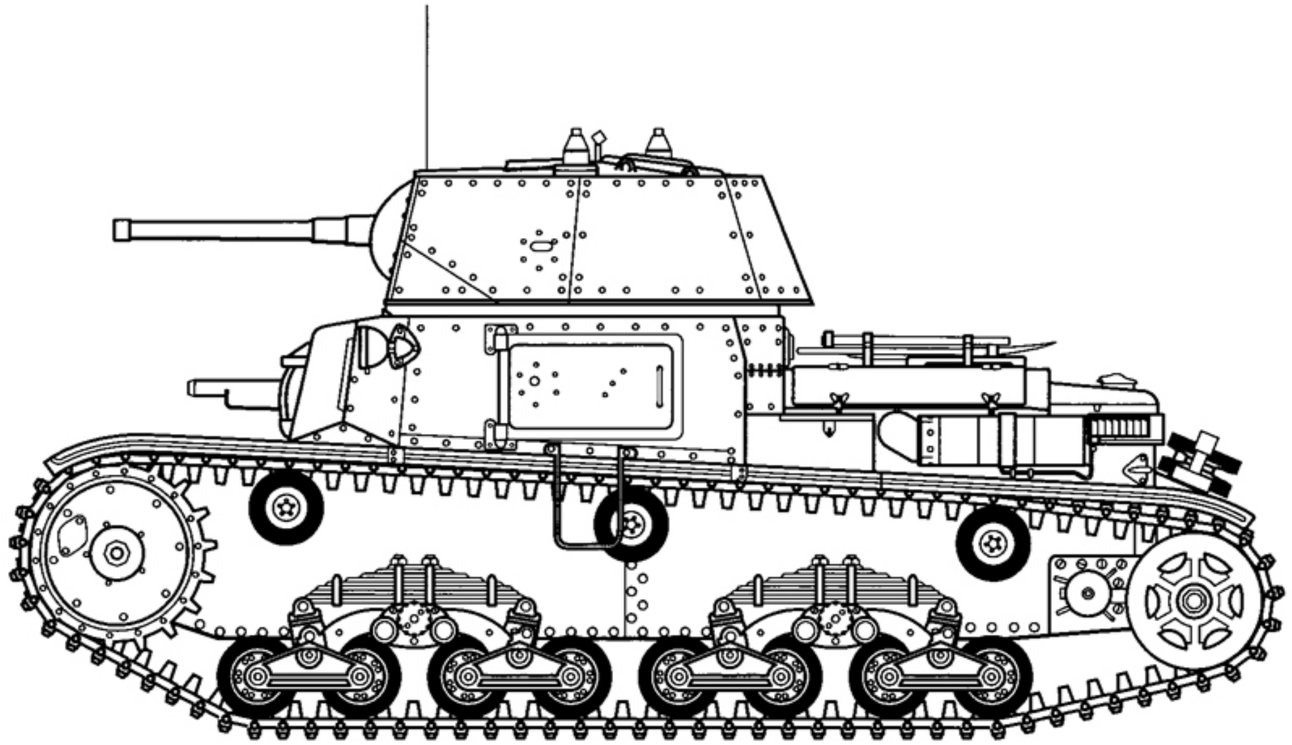
Organization of a three company M tank battalion, August of 1941:

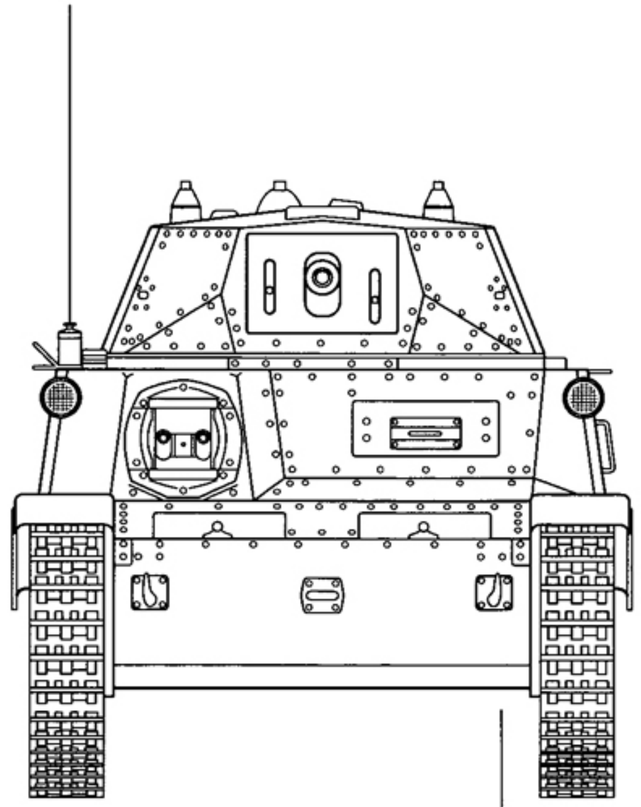
Personnel:....24 officers, 60 Non-Commissioned Officers (NCOs), 522 privates.

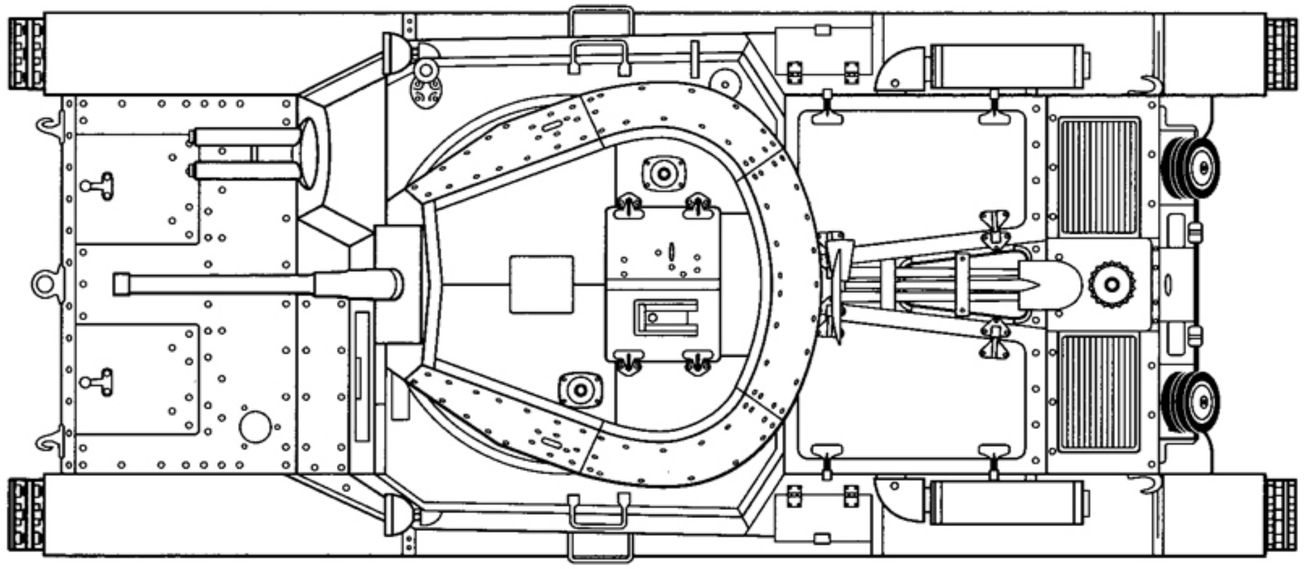
Equipment:...52 M tanks, 70 heavy trucks, 72 tank trailers, 20 loading ramps, 20 two-seater motorcycles, 12 motor tricycles, 6 *dovunque trucks, 5 cars, 3 recovery trucks, 3 special trailers, 3 vans, 1 trailer, 1 tanker, 1 Model 38 workshop.**

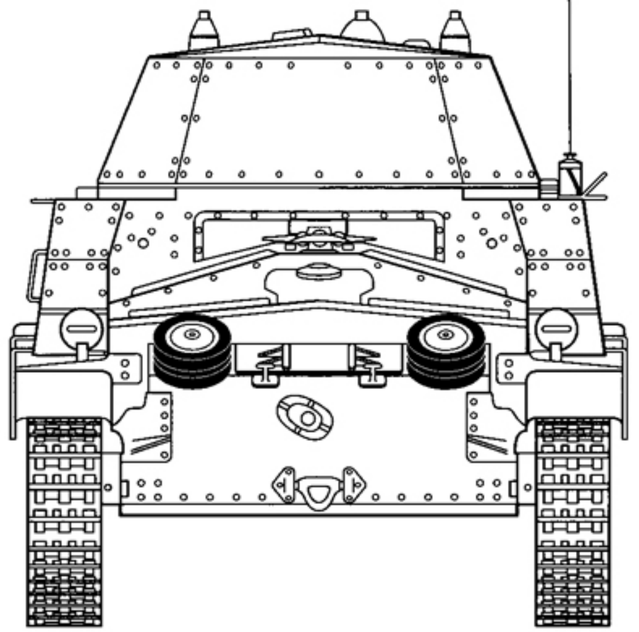
***dovunque*: lit., everywhere; here, an all-terrain vehicle**

The two brake inspection hatches were opened on the lower front full of this M 13-40. These hatches were opened to allow cooling air to flow to the brake system. The driver's vision hatch is partially opened on this vehicle for improved visibility over the viewing slit in the hatch. The two headlights normally mounted on the upper hull were often removed during exercises. (AUSSME)









Fiat-Ansaldo *Carro Armato* M 13-40 Specifications

Length:.....16 feet 1.5 inches (4.915 M)
Width:.....7 feet 5.8 inches (2.28 M)
Height:.....7 feet 9.3 inches (2.37 M)
Combat Weight:...30, 864.2 pounds (14,000 KG)
Powerplant:.....One 125 HP Fiat SPA 8T liquid-cooled, V-8, diesel engine (One 145 HP Fiat SPA 15T V-8 diesel engine in M 14-41)

Armament:.....One 47MM Ansaldo 47/32 gun with 104 rounds (M 14-41: 87 rounds) and one 8MM Breda Model 38 machine gun with 120 rounds in turret; provision for one 8MM Breda Model 38 machine gun with 120 rounds on turret roof; and two 8MM Breda Model 38 machine guns with 2592 rounds (M 14-41: 2664 rounds) in the right front hull.
Maximum Speed:...18.6 MPH (30 KMH) (M 14-41 Max. Speed 19.9 MPH/32 KMH)
Maximum Range:...130.5 miles (210 KM) (M 14-41 Max. Range 124.3 mi./200 KM)
Crew:.....Four

The M 13-40 in the Balkans

Two companies of the M 13-40 equipped 4th Battalion – originally earmarked for deployment to North Africa – were sent to Albania in November of 1940. (Italy conquered Albania in April of 1939.) Italy invaded Greece on 28 October 1940 in what Benito Mussolini hoped would be an easy conquest. He was greatly disappointed, due to unexpectedly stiff Greek resistance and the incompetence of Mussolini's generals.

The 1st Company, 4th (IV) Tank Battalion was nearly destroyed in the fighting for the Tepeleni basin in northwest Greece's Voiussa River valley in January of 1941. This Italian drive failed in its objective of taking the Klisura Castle. The Company's first platoon was stopped by mines laid in the road, Greek gunfire, and the destruction of the bridge spanning the Desnizes River on the road to the castle. All four M 13-40s were hit in this unsuccessful attack. In March of 1941, the 2nd Company, 4th Battalion attempted to support an assault on Hill 731 in northern Greece. This attack failed due to the mountainous terrain and the Company lost two tanks.

On 27 March 1941, a coup in Yugoslavia overthrew the pro-Axis regime of Prince Paul. The coup – and Italy's failing conflict with Greece – prompted Germany to invade Yugoslavia and Greece on 6 April. The 4th Tank Battalion was redeployed to Albania's northern border to support the L (light) tank battalions of the *Centauro* Armored Division. The Division's commander ordered his tanks not to move if they were not attacked by the Yugoslavs, due to the armistice talks between Italy and Yugoslavia. The truce ended at sunset on 11 April and 22 Italian tanks were then ordered to cross the Pron River. The Yugoslav defenders suddenly opened fire on the Italian column, destroying 11 L tanks and two M (medium) tanks. The Italians regrouped and sent a second wave of tanks across the Pron to attack the enemy on a flank at dawn. This attack succeeded in routing the Yugoslavs and opened the way for the *Centauro* Armored Division, led by 12 M tanks, to enter Montenegro. The Italians reached Podgorica without opposition on 12 April.

Tanks of the *Littorio* Armored Division – including five M 13-40s assigned to the 31st Tank Regiment – moved into Yugoslavia from the northwest. The Division crossed the Yugoslav border at Sussa on 12 April. The Italians raced down the Dalmatian coast and reached Ragusa (now Dubrovnik, Croatia) with little resistance on 17 April.

An M 13-40 assigned to the IV (4th) Tank Battalion crosses a shallow river in Italy during a training exercise. This tank could ford streams up to 39.4 inches (100.1 cm) in depth; however, it was not equipped for wading in deep water. The IV Battalion trained extensively in Italy before it was deployed to Albania in late 1940. (LUCE, via Cappellano)

This IV Tank Battalion M 13-40 displays its unit code on the starboard hull while practicing a shallow river crossing. The single white stripe on the colored rectangle indicated the 1st Platoon of a tank company, while the numeral 1 above the rectangle designated the first tank in the platoon. Roman numerals were occasionally used to indicate the battalion number within an armored regiment. (LUCE, via Cappellano)

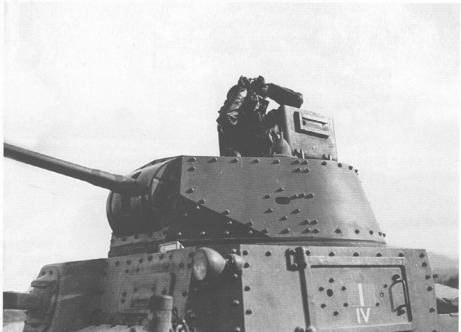
A wooded terrain was not the best place for tanks to operate, although this M 13-40 seems to easily clear its way through the trees. This IV Battalion tank has spare bogey wheels and a tow cable placed on its aft deck. The Battalion and its M 13-40s saw action during Italy's disastrous invasion of Greece in the fall of 1940. (LUCE, via Cappellano)

This M 13-40 assigned to the IV (4th) Tank Battalion emerges from a section of woods during training in Italy in 1940. The tank's turret had turned to starboard and its 47MM gun was raised to its maximum elevation of 20°. The Ansaldo 47/32 gun had a muzzle velocity of 2066.9 feet (630 M) per second and could penetrate 1.7 inches (43MM) of armor at 550 yards (502.9 M). (LUCE, via Cappellano)

A platoon of IV Tank Battalion M 13-40s move along a newly completed Albanian road during the Greek campaign of 1940-41. None of these tanks were fitted with radios or 8MM anti-aircraft machine guns on the turret roof. The IV Battalion was originally scheduled for deployment to North Africa, but was sent to Albania in November of 1940. (LUCE, via Cappellano)

An M 13-40 is refueled in the field by one of its crewmen, while two of his comrades are in the turret. The 8MM Breda Model 38 machine gun mounted on the turret roof is fitted with an anti-aircraft sight parallel to the gun barrel. Italian tank crewmen wore black leather helmets and jackets over dark blue linen overalls. (LUCE, via Cappellano)

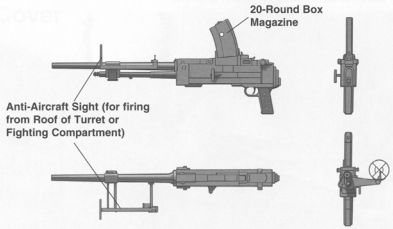
This M 13-40 commander scans the skies for approaching British aircraft over northwestern Greece in early 1941. Italian industry lacked the ability to cast large tank turrets and hulls, resulting in riveted and welded tanks with inferior protection than the cast and welded armored vehicles used by other countries. The tank was assigned to the 1st Platoon of a Company in the IV (4th) Armored Battalion. (LUCE, via Cappellano)



Italian armor tended to crack when hit due to the armor's lack of tensile strength. A Greek artillery shell hit the starboard side of Lt Passalacqua's M 13-40 at Klisura, Albania on 27 January 1941. The tank's wounded driver succeeded in bringing the vehicle back to his unit's base before fainting. He and the bow machine gunner survived their wounds; Passalacqua and his turret loader died of their wounds several days later. (LUCE, via Cappellano)

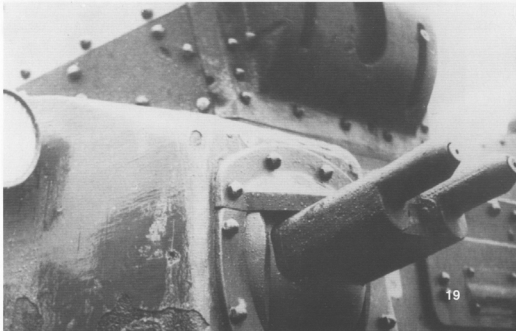
Two M 13-40s dodge enemy fire while assaulting Hill 731 in northern Greece on 19 April 1941. One month earlier, the 2nd Company of IV Battalion lost two tanks in an unsuccessful attack on this hill. The April assault was a success and the Italian forces continued their advance into Greece. (LUCE, via Cappellano)

8MM Breda Model 38 Machine Gun



Cyclic Rate of Fire:..450 rounds per minute
Muzzle Velocity:.....2600 feet (792.5 M) per second

The starboard center hull of this M 13-40 displays battle damage from conflict with the Greeks, who lacked effective anti-tank weapons. The two 8MM Breda Model 38 machine guns were fitted within cast steel armored sleeves on a pivoting mount in the front right hull. These weapons could traverse up to 15˚ left or 15˚ right. (LUCE, via Cappellano)



One of the *Littorio* Armored Division's few M 13-40s crosses the Yugoslav border at Sussa on 12 April 1941. The commander sits on the turret roof with little threat of enemy gunfire present. Both brake inspection hatches were propped open on the tank's bow. This Division was based in northeast Italy and advanced along Yugoslavia's Adriatic coast to reach Ragusa (now Dubrovnik, Croatia) on 17 April. (Pignato)

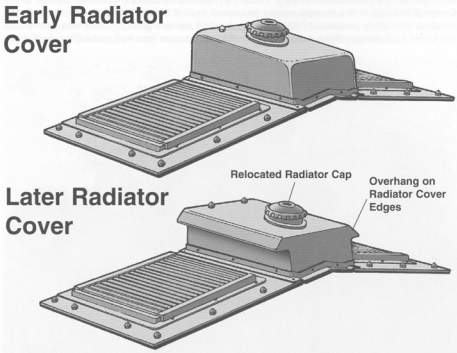
A IV Tank Battalion M 13-40 lies immobilized on Hill 731 in northwest Greece in the spring of 1941. Part of the tank's running gear lay mangled beside its port side. The 1st Company's playing card insignia was painted beside the hull machine gun mount, while painted in Italian on its front hull is *Pericolo Mina E' Proibito Passare* (Danger, Mine, No Trespassing). (Pignato)

This same M 13-40 disabled on Hill 731 is viewed by several soldiers after the battle. This tank was probably stopped by either a land mine or an artillery shell. The three white stripes on the colored rectangle placed on the aft end indicated this M 13-40 was assigned to the 3rd Platoon of an Armored Company. (Pignato)

An M 13-40 on training exercises rides through a narrow Italian stream during the spring of 1941. The driver has opened his hatch for an improved view of the territory ahead of his tank. M 13-40s produced from early 1941 were painted overall Yellow Sand (FS20260) instead of the previously used Gray-Green (FS34159). (AUSSME)

A battalion of new M 13-40s train in Italy for fighting in North Africa during the spring of 1941. Beginning with the 752nd vehicle produced, the M 13-40 was fitted with shorter fenders and different footsteps on both the port and starboard sides. (AUSSME)

A battalion of M 13-40s practice armored attacks in Italy during the spring of 1941. A 1.6 foot (0.5 M) diameter white disc was painted on top of the turret for air recognition purposes. The 802nd vehicle built increased gun elevation space. Changes made from the 951st hull completed included a revised turret roof plate and mushroom-shaped radiator compartment covers. (AUSSME)



M 13-40s assigned to the VII (7th) Tank Battalion advance along a Libyan road in early 1941. A jack was placed on the aft port hull cover from hull 0752, while the spare road wheel was retained on the starboard side. This Battalion was assigned to the *Ariete* Armored Division, which saw extensive action in North Africa. (Cappellano)

Crewmen assigned to the VII Tank Battalion attend to their M 13-40s in Libya in early 1941. The jack normally fitted to the port fender was removed from the two tanks on the right (R⁹E¹⁰ 3042 and 3030). The track connecting fixture was placed on the center of the aft deck, behind the original shaped radiator compartment. (Cappellano)

The M 13-40 in North Africa

The Italians in North Africa – smarting from their defeat by the British – were reinforced with the arrival of the DAK (*Deutsches Afrika Korps*; German Africa Corps) on 12 February 1941. The DAK arrived in Tripoli with its commander, *Generalleutnant* (Lt Gen) Erwin Rommel. The first M 13-40 Battalion to attack east after Rommel's arrival was the 7th Tank Battalion of the *Ariete* Armored Division, which had a headquarters (HQ) company and three tank companies. Each company consisted of an HQ platoon and three platoons of five tanks each. The 8th, 9th, and 10th battalions of the Ariete were also equipped with these tanks. The Division received 132 new M 13-40s by the spring of 1941.

The 31st Tank Battalion of the *Littorio* Armored Division and the 14th Tank Battalion of the *Centauro* Armored Division were also assigned to North Africa. The 12th Battalion's tanks were sunk by Allied forces in the Mediterranean en route to Libya. The 11th Tank Battalion, 101st *Trieste* Motorized Division was the last unit in North Africa to receive the M 13-40. Most of the Italian tank battalions in this theater replaced their M 13-40s with improved **M 14-41**s during 1942. The M 14-41 was identical to the M 13-40, except for having a more powerful 145 HP engine and various structural refinements. The exception to this was the 4th Tank Battalion, which retained their M 13-40s during the Axis invasion of Egypt in August of 1942. The 4th Tank Battalion would later receive M 14-41s, along with the 51st Tank Battalion deployed from Italy. The short-lived 52nd Tank Battalion – a former L tank unit – received older M 13-40s and became the *Ariete* Armored Division's HQ unit. The British offensive at El Alamein, Egypt that fall turned the tide in North Africa. Many M 13-40s and M 14-41s were lost as the Axis forces were forced west to Tunisia by early 1943.

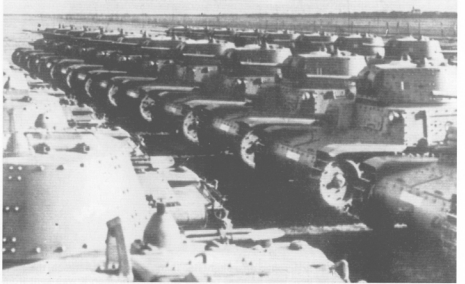
An M 13-40 assigned to the VII (7th) Armored Battalion, *Ariete* Armored Division drives through the Libyan desert in early 1941. The Division's tanks – finished overall Gray-Green (FS34159) at the factory – were repainted Yellow Sand (FS20260) with Gray-Green patches after they arrived in Tripoli, Libya. A white air recognition cross was painted on the turret roof; some vehicles also wore a white disc on the rear hull plate. (Bundesarchiv)

A VII Tank Battalion M 13-40 is perched on a slight rise in the desert in Cyrenaica, the eastern province of Libya. The tank was painted overall Gray-Green when it was sent from Italy to Libya in early 1941. The two-part turret roof hatch opened outward to allow the commander/gunner and the loader access to and from the turret. (Cappellano)

An M 13-40 of the 1st Platoon of a company in the VII (7th) Tank Battalion was loaded onto its trailer for strategic transport. Hull number 802 introduced a small bulge on the turret roof for easier main gun depression. This tank received Yellow Sand splotches over the Gray-Green base coat when it arrived in North Africa. (LUCE, via Cappellano)

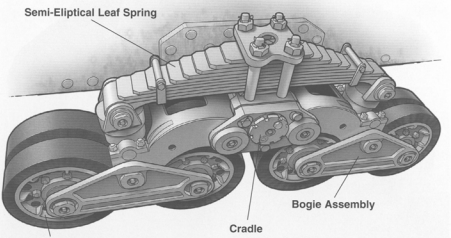
A tank officer stands beside an M 13-40 (R^{o}E^{TO} 3052) during his training period. Armored personnel wore red and sky blue collar patches on their gray-green uniforms. The Royal Italian Army's vehicle registration number was only displayed on a stamped plate on the tank's left rear before mid-1941, when this number was also painted on the front hull. The registration was in red lettering and black numbers on a white background. (Palma)

This M 13-40 was used by Italian officers as a communication post during an exercise. A reel of telephone wire was placed on the front hull before the twin machine gun mount and open driver's hatch. The *Regio Esercito* (Royal Italian Army) were issued gray-green service uniforms in Europe; however, both gray-green and tropical khaki uniforms were worn by Italian personnel stationed in North Africa. (Cappellano)

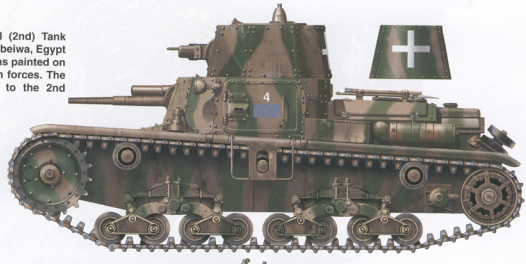


M 13-40s assigned to the IV (4th) Tank Battalion are assembled at the Comina Plain in northeast Italy in 1942. The Battalion was soon deployed from this staging area to the North African theater. Many of these M 13-40s would be destroyed in the fighting around El Alamein, Egypt during the fall of 1942, which marked the turning point in the North African campaign of World War Two.

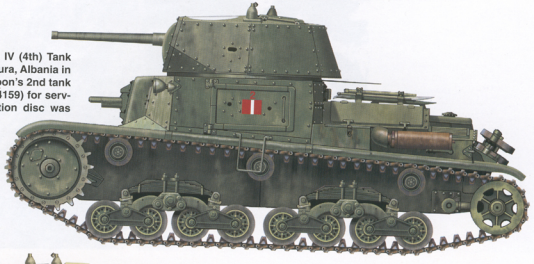
M Tank Suspension



This M 11-39 was assigned to the II (2nd) Tank Battalion, which fought the British at Nibeiwa, Egypt on 12 December 1940. A white cross was painted on the turret rear for recognition by Italian forces. The M 11-39 was the 4th tank assigned to the 2nd Company Commander's Platoon.

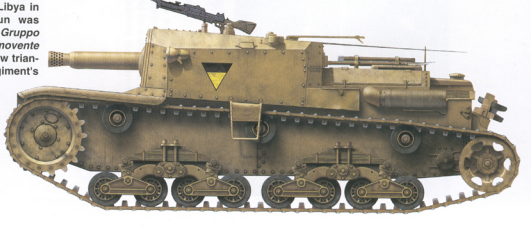


The 1st Platoon, 1st Company of the IV (4th) Tank Battalion operated this M 13-40 at Klisura, Albania in March of 1941. Th[1]s vehicle – the Platoon's 2nd tank – was painted overall Gray-Green (F34159) for service in Europe. A white air identification disc was painted on the turret roof.

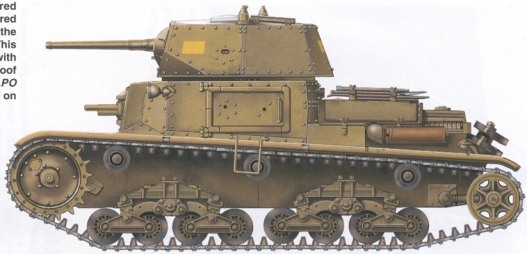


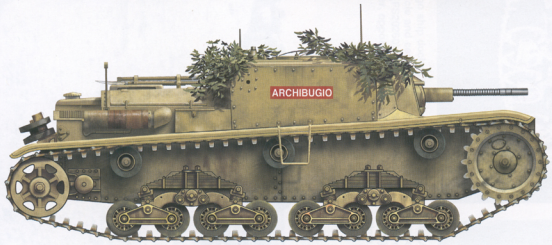
This M 13-40 was assigned to the VII (7th) Armored Battalion at Barce, Cyrenaica (eastern Libya) in December of 1941. The 2nd Platoon designation rectangles on the turret and hull sides were slightly oversprayed with Gray-Green. The tank's base color was Yellow Sand (FS20260).

The *Semovente da 75/18* – based on the M 13-40 tank – fought at Bir Hakeim, Libya in May of 1942. The self-propelled gun was assigned to the V (5th) *Semovente Gruppo* (Assault Gun Battalion), the first *Semovente* unit to see combat. The black and yellow triangle insignia was devised by the Regiment's commander.



This M 14-41 tank was assigned to the 3rd Company Commander, 133rd Armored Regiment of the *Littorio* (Fasces) Armored Division in western Egypt, just prior to the battle of Alam Halfa in July of 1942. This tank was painted overall Yellow Sand with a white air identity disc on the turret roof and the Division's motto *A COLPO SICURO* (To have the certainty) in red on the gun mantlet.

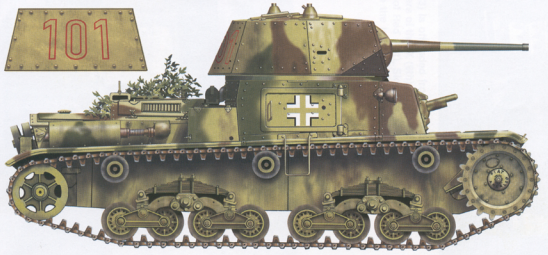




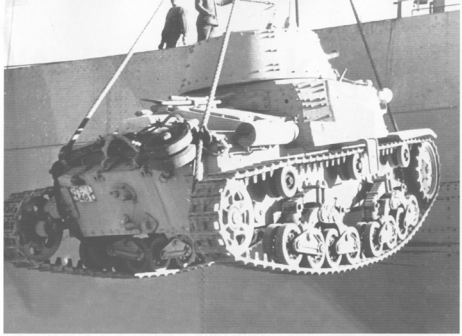
Carro Comando per semoventi (Command Vehicle) ARCHIBUGIO (Arquebus, a 15th & 16th Century handgun) was assigned to the DLVII (557th) *Gruppo* (Assault Gun Battalion) in Sicily in January of 1943. This vehicle was sent with the Battalion to Tunisia for the final battles in North Africa. *Semoventi* were sometimes named after vintage guns. Tree branches on the superstructure helped break up the *Carro Comando*'s silhouette.

ARCHIBUGIO

The handful of *Semovente da 105/25s* produced were finished with Red-Brown (FS20100) and Gray-Green patches over a Yellow Sand base. The Germans impressed these assault guns for their use following the Italian Armistice of 3 September 1943.



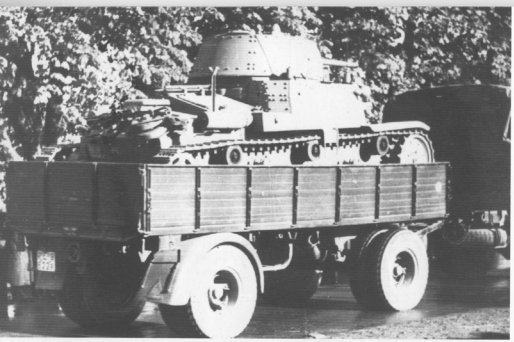
The German 7th SS Volunteer Mountain Division *'Prinz Eugen"* operated this M 15-42 command tank on anti-partisan operations in northern Italy during 1944. This vehicle used the drive sprocket fitted to late M 15-42s. The Germans added Red-Brown and Dark Green patches to the Yellow Sand finish. The red outlined tactical number 101 was painted on the turret rear.



An M 13-40 (R^{o}E^{TO} 3461) is off-loaded from a cargo ship docked in Tripoli, Libya in early 1941. The tank was an attrition replacement vehicle and carries no markings other than the registration plate on its overall Yellow Sand (FS20260) finish. This M 13-40 lacks the lifting jack usually stowed on the aft left hull cover, opposite the spare road wheel.

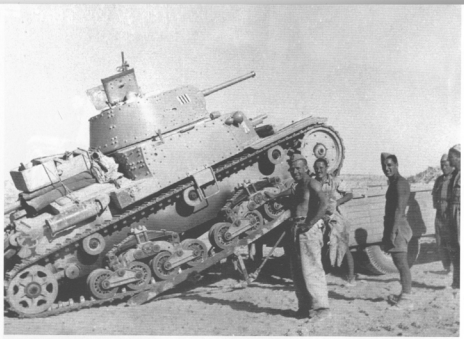
An *Ariete* Armored Division M 13-40 (R^{o}E^{TO} 3123) is offloaded from its Viberti transport trailer. This tank was assigned to the Headquarters of the IX (9th) Armored Battalion, with the rectangle divided into the Company colors of Red (1st), Sky Blue (2nd), and Yellow (3rd). The regiment number was not painted on the left rear hull superstructure at that time. (LUCE, via Cappellano)

A convoy of Lancia 3/Ro trucks haul M 13-40 tanks on their Viberti transport trailers to the combat zone in North Africa. The 3/Ro weighed 6.2 tons (5.6 MT) and was powered by a 93 HP diesel engine. Italian soldiers nicknamed this truck the 'King of the Desert' for its superlative performance in North Africa. The 3/Ros and Viberti trailers were organized into Tank Transport Groups beginning in June of 1942. Each Group consisted of 258 3/Ro trucks and 243 trailers. The transporters reduced running gear wear and fuel consumption on the tanks before and after the battle.



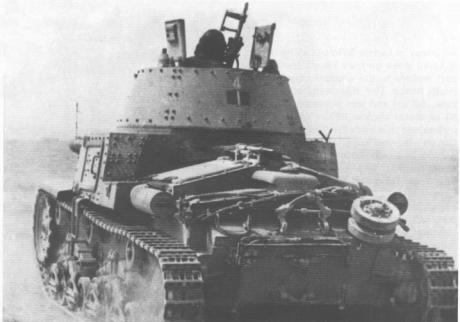
An M 13-40 *Centro Radio* (Radio Center) command tank is parked on a transport trailer connected to a 3/Ro truck during a wartime parade. The *Centro Radio* variant was equipped with RF 1 CA and RF 2 CA radios for use by battalion commanders. The two radio antennas were mounted to starboard of the turret. (AUSSME)

M 13-40s rest on the side of a Libyan road after their arrival from Italy. The front hull brake cooling hatches were opened on the two lead tanks, while the two aft tanks have fully opened driver's hatches. The white registration plates on the M 13-40s' bows have red lettering and black numbers.



Italian armored personnel unload an M 13-40 from its transport trailer in North Africa. The tank used a ramp mounted to the trailer's aft end for loading and unloading. The white turret rectangle indicated the tank's assignment to the regimental headquarters company, while its three black stripes signified the Company's 3rd Platoon. (LUCE, via Cappellano)

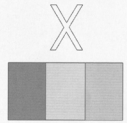
An M 13-40 of the VIII (8th) Battalion moves at full speed in the North African desert. An 8MM Breda Model 38 anti-aircraft machine gun was mounted just ahead of the commander's hatch. The markings on the M 13-40's turret indicate it was the 4th tank of an Armored Company's 1st Platoon. This vehicle was fitted with the late style radiator cover on the engine deck. (LUCE, via Cappellano)



Italian Tank Markings, World War II

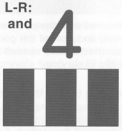
Tactical Signs

(Per Royal Italian Army Regulations of 8 September 1940)



Commander, 10th (X) Battalion (Colors L-R: Red, Sky Blue, and Yellow)

Company Commander



4th Tank, 2nd Platoon

3rd Tank, 1st Platoon

1st Tank, 3rd Platoon

Rectangle colors: red (1st Company), sky blue (2nd Company), yellow (3rd Company), green (4th Company – not used during World War II), black (Battalion Headquarters Company), and white with black bars (Regimental Headquarters Company). A white vertical bar identified the platoon; the number above the rectangle, in the company color, identified the individual tank within the platoon.

Vehicle Registration Plates

(Used by all Royal Italian Army vehicles, including tanks and assault guns)

Rear Hull Plate

Front Hull Plate

The vehicle registration plates were white with red lettering RºETO (*Regio Esercito*; Royal Army) and red flaming grenade. The serial number was black.

The center insignia – a white 4 inside a red rectangle – was an unofficial tactical marking, seen in Tunisia on an M 41 *Semovente* (self-propelled gun).

Motor Vehicle Badge

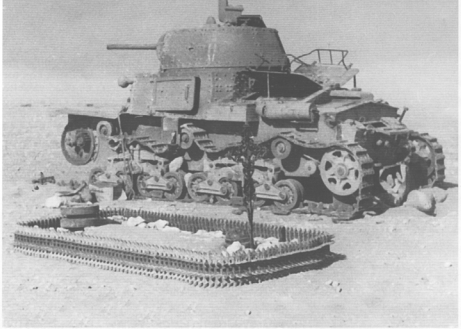
The RºETO (*Regio Esercito*; Royal Army) motor vehicle badge was cast in either bronze or aluminum. It was displayed on Italian armored vehicles from April of 1936 until August of 1943. This badge was placed on the vehicle's upper left glacis armor. The fasces – emblem and namesake of the Fascist Party – consisted of an ax wrapped with rods. The five-pointed star is worn on the collars of Italian military uniforms.

This M 13-40 advancing in the North African desert was fitted with additional sandbags on the front hull. These sandbags provided additional protection against British anti-tank weapons, which could easily penetrate the tank's 30MM frontal armor, but overtaxed the tank's suspension. The radio antenna mounted beside the turret indicated a late-production M 13-40 – early production examples lacked radios.

The M 13-40 turret was equipped with a split upper hatch. The turret periscope cover was placed forward and port of the commander's hatchway. The tank commander rested his right hand on the 8MM anti-aircraft machine gun bracket. This weapon was not always fitted to M 13-40s in service.

An M 13-40 crewman sits on his tank's front hull watching passing British prisoners in Egypt's Western Desert during the summer of 1942. During World War II, Italian tank crewman wore a black leather helmet with leather neck flap and goggles. The three-quarter length black leather coat was worn over a plain dark blue overall. (LUCE, via Cappellano)

M 13-40s advance toward the front lines in Libya during 1942, while the commander and gun loader ride atop the turret. The column's trailing tank (RºE TO 3247) carried its regiment number (132) in white on the upper port hull. This M 13-40 was the 4th tank assigned to the 2nd Platoon of the 132nd Armored Regiment's 1st or 2nd Company. (LUCE, via Cappellano)



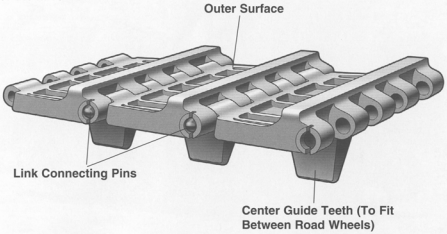
A destroyed M 13-40 of the XI (11th) Battalion, *Littorio* Armored Division, rests near the grave of one of its crewmen in the Western Desert during the summer of 1942. Tank links surrounded the gravesite, while a spare double roadwheel was placed at the foot. A cross and the crewman's leather helmet were placed at the grave's head. (AUSSME)

M 13-40s maneuver in the Western Desert while leading the Italian forces towards El Alamein, Egypt during the summer of 1942. The *Ariete* and *Littorio* armored divisions spearheaded the Italian forces operating with the German *Afrika Korps* in the Axis advance on Egypt. (LUCE, via Cappellano)

Littorio Armored Division M 13-40s laden with sandbags and 5.3 gallon (20 L) fuel containers (jerrycans) maneuver at Bab el Qattara, Egypt in July of 1942. The sandbags provided increased frontal protection, but at the cost of increasing the tank's weight and strain on its engine. Fuel in the jerrycans mounted on the sides increased the M 13-40's normal 130.5 mile (210 KM) range.

Track Links Used on M Tanks and *Semoventi*

Track Width: 10.2 inches (26 CM)
Links per track: 80 for the M 11-39; 84 for the M 13-40 and the M 14-41; and 86 for the M 15-42.



Three M 13-40s assigned to the *Littorio* Armored Division advance on El Alamein, Egypt during the summer of 1942. A towing cable was carried on the tank's bow to assist in recovering disabled vehicles and equipment. The *Littorio*'s insignia – an armored lancer leaving his horse for a tank – was painted on the center of the front hull superstructure, between the twin machine guns and the driver's viewing hatch. The lead tank (RoET0 3328) was the 2nd tank assigned to an Armored Company's 3rd Platoon. M 13-40s made up the bulk of the Italian tanks employed during the Alamein campaign.

Italian Armor Camouflage Colors of World War II
(Federal Standard Numbers Approximate)

Red-Brown (*Terracotta*) FS20100

Gray-Green (*Grigio Verde*) FS34159

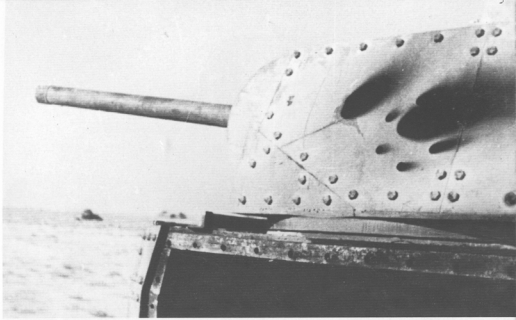
Yellow Sand (*Sabbia*) FS20260

A group of tankers and *bersaglieri* (elite light infantry) perch on or stand beside an M 13-40 *Centro Radio* (Radio Center) command tank in the Western Desert. The *bersaglieri* wore their traditional black feathers on the right side of their cork sun helmets. This *Centro Radio* variant had additional radio equipment, with a second antenna mounted on the right aft hull superstructure.

A crewman looks over the engine deck of a disabled M 13-40 tank in North Africa. This tank was hit in the hull front and abandoned by its crew. This third series M 13-40 had fenders only over the front third of the running gear. This tank's crew attached a bucket to the lower aft hull below the spare road wheel. (Bundesarchiv)

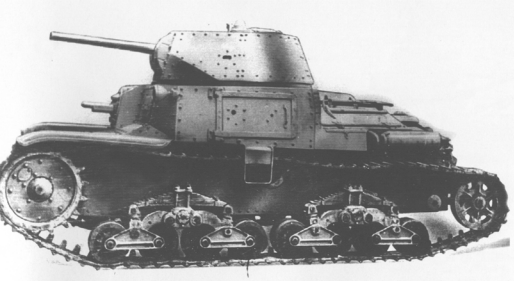
The *Littorio* Armored Division's motto, *A COLPO SICURO* (To have the certainty), was painted in red on this M 13-40's upper gun mantlet. The turret roof armor cracked from this vehicle being hit by British gunfire. A white disc painted on the turret roof was for recognition by friendly aircraft. The bulge on the turret roof allowed for increased main gun depression.

This M 13-40 assigned to the *Littorio* Armored Division was destroyed in action in North Africa. The detonation of ammunition blew the top off the turret and the turret itself off the tank's hull. Part of the *Littorio* Division and the entire *Ariete* Division were destroyed in Britain's El Alamein offensive in the fall of 1942.



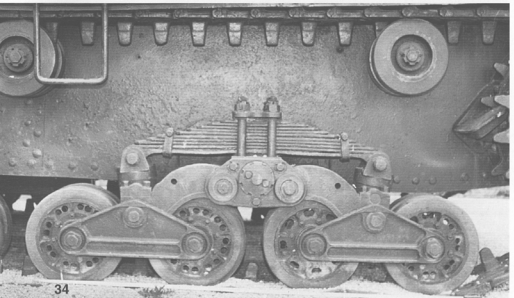
This *Littorio* Armored Division M 13-40's turret was hit several times by enemy fire, which blew out the port side hull and easily penetrated the turret's 30MM armor. Smoke stains around the projectile entry holes indicated a fire inside the turret after the M 13-40 was hit, which was usually fatal to its crew.

The turret and side hatches were opened on this disabled M 13-40 in Italy during 1943. The tank was hit on the lower front turret, while the blackened turret hatch inner surface indicated a fire occurred inside the turret. The oval opening on the turret side was a pistol port fitted to the M 13-40, which enabled a crewman to fire his pistol at enemy troops outside of the vehicle. (Bundesarchiv)



The early M 14-41 tanks were externally identical to the previous M 13-40s. The changes were internal, in the form of the 145 HP Fiat SPA 15T engine, which provided an additional 20 HP over the M 13-40's 125 HP SPA 8TM powerplant. The device under the driver's side hatch was a step for mounting and dismounting the tank. (Fiat)

The M 14-41 retained the suspension system used by the earlier M 11-39 and M 13-40. Four double wheeled articulated bogies were paired into two bogie assemblies on each side of the tank. A semi-eliptical leaf spring was connected to each pair of bogies and was supported by a cradle in the bogie assembly's center. A short link with a coil spring was placed inside the cradle. A mud cleaner blade was fitted immediately aft of the drive sprocket from M 14-41 hull 1952. (Pignato)



M 14-41 Tank

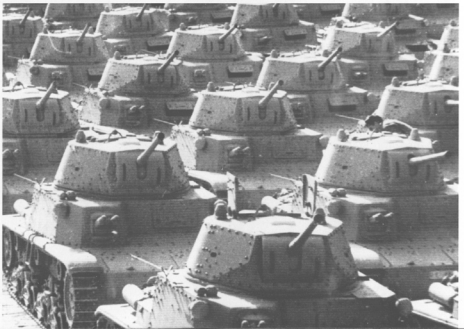
The *Carro Armato* (Army Tank) M 14-41 first appeared in the late summer of 1941. This vehicle incorporated all the improvements of the previous M 13-40 series and was powered by a 145 HP Fiat SPA 15T V-8 diesel engine. This engine delivered greater power than the M 13-40's 125 HP SPA 8T V-8 diesel engine. The new M 14-41 tank was distinguished from its predecessor by the different transversal outlet radiator grills, the mud clearing blades at the drive sprockets, and the new elongated fenders. Front and side 5.3 gallon (20 L) can supports were also added. The first M 14-41 tank accepted by the *Regio Esercito* had number plate R.E.10 3498 and was a *Centro Radio* (Radio Center) command variant with additional radio equipment for battalion commanders.

The M 14-41 was issued to the five tank battalions – the 13th, 14th, 15th, 16th, and 17th – which fought the Allies in Tunisia in early 1943. This vehicle also equipped the 18th Tank Battalion, which remained on the Italian Island of Sardinia until the unit was disbanded in 1944.

The 15th Tank Battalion was reorganized in January of 1943, shortly before deploying to Tunisia. The Battalion include two M 14-41 tank companies and one *Semovente* (self-propelled gun) company. In January of 1943, the 18th and 19th Battalions and the three battalions of the *Vittorio Emanuele II* (Victor Emanuel II) Cavalry Armored Regiment – all equipped with M 15-42s – were reorganized to include two *Semovente* companies and one tank company.

Ansaldo documents show that 235 M 13-40s were produced in 1940 and 475 were built in 1942. This resulted in a total of 710 M 13-40s built. The company delivered 376 M 14-41s in 1941 and 376 more in 1942, for a total of 752 M 14-41s.

Several M 14-41 tanks – M 13-40s with more powerful engines – await shipment to the North African war zone during 1942. The lead tank's two-piece turret hatch was fully opened and has the bulge ahead of the turret. This bulge allowed for greater 47MM main gun depression. The radio antennas placed immediately starboard of the turrets were folded back to prevent damage during shipment. (AUSSME)



A company of M 14-41s charge downhill during testing at Ansaldo's Proving Ground near Genoa, Italy during 1942. Most of these tanks have their two-piece turret hatches opened. Each M tank battalion consisted of three companies of 15 tanks each, with seven additional tanks assigned to battalion headquarters. (Rosini)

Production M 14-41s perform testing at the Ansaldo Proving Ground during 1942. These tests confirmed the new tank's performance and handling over the type of terrain likely to be encountered on the battlefields of North Africa and Europe. The M 14-41 – like the earlier M 13-40 – could cross trenches 6.9 feet (2.1 M) in depth. (Rosini)

M 14-41 tanks sent from Italy were offloaded from an Italian landing craft in Libya for delivery to front-line units. The tank driving off the beach was marked with a white air identity disc on the turret roof. Several Italian ships carrying M tanks were lost to British warships and aircraft operating in the Mediterranean Sea.

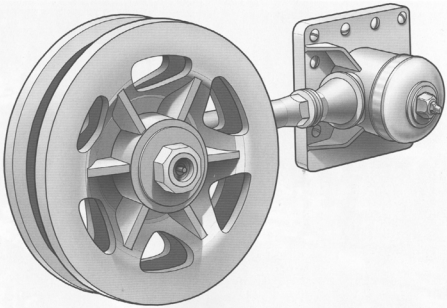
Italian troops line the street for a procession of M 14-41s during a parade in 1942. The tank was modified early in its production (from hull number 1402) to have three-piece, full-length fenders above the tracks. These items replaced the shorter fenders fitted to early production examples and to the late production M 13-40s. (Pignato)

An early M 14-41 is offloaded from its transport trailer. An 8MM anti-aircraft machine gun was mounted in the turret hatchway. The solid black rectangles on the turret indicate this tank was assigned to the battalion headquarters company's commander. Pioneer tools were placed atop the engine compartment. Fuel containers were placed on racks mounted on the rear hull plate and right hull side. (Bundesarchiv)

This M 14-41 of the *Centauro* Armored Division was covered with spare track links along the front hull and turret and 5.3 gallon (20 L) jerrycans along the starboard side. These items offered greater protection from improved Allied anti-tank weapons than sandbags. The idler wheel at the aft end of the tank's running gear provided tension for the track.

This M 14-41 (RSETO 3581) in North Africa carries sandbags and a camouflage net on the front hull for added frontal protection. The driver could only look ahead through his roof-mounted periscope. A towing cable was stowed on two towing hooks secured to the tank's bow. The M 14-41 was the 1st tank of 3rd Platoon of an Armored Company. (AUSSME)

Idler Wheel and Track Tension Adjuster

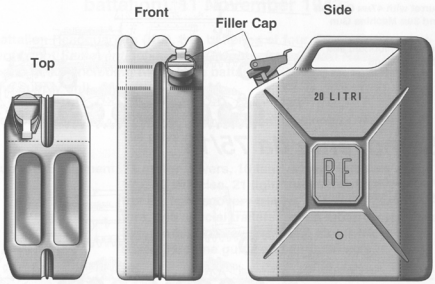


The last M 14-41s deployed to North Africa were landed at Bizerte, Tunisia in late 1942. They were immediately sent to face the British and American forces closing in on the Germans and Italians. The M 14-41 retained the 47MM turret-mounted gun and the two hull-mounted 8MM machine guns fitted to the earlier M 13-40 tank.

A column of M 14-41s head for the fighting in Tunisia in early 1943. The lead vehicle lacked the fuel container (jerrycan) supports fitted to final production series M 14-41s. The second vehicle had these supports installed. These M 14-41s were primarily assigned to the *Centauro* Armored Division, the only such Italian formation remaining in North Africa at that time.

US troops inspect an abandoned M 14-41 of the *Centauro* Armored Division in Tunisia's Kasserine Pass during the spring of 1943. The turret 8MM coaxial machine gun was mounted to the left of the 47MM turret main gun. The last Axis troops in Tunisia – approximately 250,000 men – surrendered to the Allies on 13 May 1943.

5.3 Gallon (20 L) Italian Fuel Can



Semovente da 75/18

By early 1941, the *Regio Esercito* (Royal Italian Army) knew that production of a P (*Pesante*; heavy) tank was one to two years away. An interim step was taken to produce armored fighting vehicles with heavier armament than the existing M 13-40 tank's 47MM gun. The Semovente series of armored fighting vehicles was developed in early 1941 and was inspired by Germany's StuG III (*Sturmgeschütz*; assault gun), which featured a 75MM gun mounted on a PzKpfw III tank chassis.

The Semovente's lower hull and suspension remained the same as the M tanks, while the upper hull was redesigned to mount the 75mm Ansaldo L/18 (18 caliber) field gun in a fixed superstructure. This weapon consisted of a barrel with short jacket, a locking ring, and a detachable breech ring. The 75MM gun had a muzzle velocity of 1394.4 feet (425 M) per second and a maximum range of 10,454.9 yards (9560 M). The main gun was elevated by hand crank on a range from -12° to +22°, while its traverse by hand crank was 20° left and 18° right. The *Semovente*'s 75MM gun used a rebound percussion type firing mechanism – similar to that used on contemporary US tank guns – with fire and safe levers placed on the right face of the breech block. This block included a horizontal sliding wedge breech for the gun. A 'pepper box' muzzle brake and flash eliminator was fitted to reduce recoil and hide the gun flash from enemy eyes.

The gun's recoil system was housed inside the gun cradle and the mounting was a gimbal type. The gimbal ring was formed from the rim of the 2 inch (50MM) thick hemispherical intermediate mantlet, which carried the two horizontal and two vertical bearings supporting the gun. The vertical trunion was carried in two brackets placed on the front wall of the fighting compartment.

The prototype of the *Semovente da 75/18* – mounted on the M 13-40 hull – appeared in early 1941. This vehicle was painted overall Gray-Green (FS34159) with no other markings. The 75MM Ansaldo L/18 gun was centrally mounted in the assault gun's forward superstructure. The *Semovente*'s fenders only covered the front track area between the bow and superstructure. (AUSSME)

The 75MM gun's sighting gear was mounted to the right side of the gun mounting. A bracket carried a dial sight, whose head projected through an aperture in the roof of the fighting compartment. A flap covered the sight for protection. Each *Semovente* (plural: *Semoventi*) could carry 44 to 50 rounds of 75MM ammunition, evenly divided among High Explosive (HE), Armor Piercing (AP), and High Explosive Squash Head (HESH) types.

The *Semovente*'s secondary armament originally consisted of one 6.5MM Breda Model 30 light machine gun for anti-aircraft use. This weapon was soon replaced by an 8MM Breda Model 38 machine gun with 1104 rounds of ammunition. The armor protection ranged in thickness from 0.4 in (10MM) to 2 in (50MM). The *Semovente* 75/18 had a crew of three men: commander/gunner, loader, and driver.

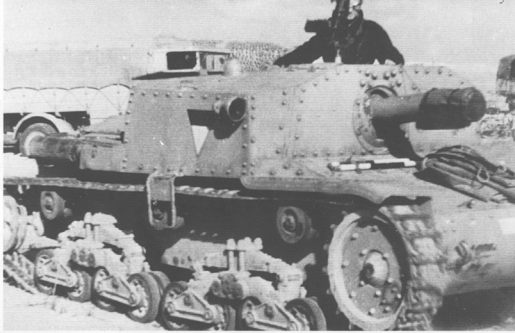
The *Semoventi* deployed to North Africa, and based on the M 13-40 and early M 14-41 chassis, carried four 5.3 gallon (20 L) fuel or water containers (jerrycans) on the rear of the radiator cover plate. These containers (not always carried) were generally held in place by a piece of bent metal tube bolted horizontally to the cover plate. Assault guns based on late production M 14-41s and M 15-42s could carry six jerrycans on the superstructure's sides. Two containers were carried on the right side, one on the left rear corner, and the other three were placed on the left side.

The first *Semovente* batteries were sent to Libya in January of 1942 and proved most effective against the British Army's US-built M3 Grant and M4 Sherman medium tanks. This effectiveness was due to the Italian 75MM EP (*Effetto Pronto*; Ready Effect, or HESH) round, which could pierce 2.8 inches (70MM) of armor plate.

Total *Semovente* production by Fiat-Ansaldo included 60 vehicles on the M 13-40 hull and 162 on the M 14-41 hull in 1942.

M 13-40
Turret with 47MM Cannon and 8MM Machine Gun
Two Hull-Mounted 8MM Machine Guns
Semovente da 75/18
One 75MM Gun in Enclosed Superstructure

A *Semovente da 75/18* rolls into action in North Africa. This vehicle was better protected than the M tanks not only by their low silhouette, but also by the 50mm front superstructure armor. An 6.5mm Breda Model 30 machine gun was fitted to the superstructure roof for anti-aircraft defense. This weapon was later replaced by the 8mm Breda Model 38 machine gun. The driving lights placed on the forward superstructure were covered to hide the light from upward view.



A *Semovente da 75/18* arrives in the North African theater during 1942. These assault guns received a distinctive tactical marking on the sides: a yellow downward-pointing triangle with black top and trim. A dust cover was placed over the 75mm gun's muzzle to protect the gun mechanism during transport to the front.

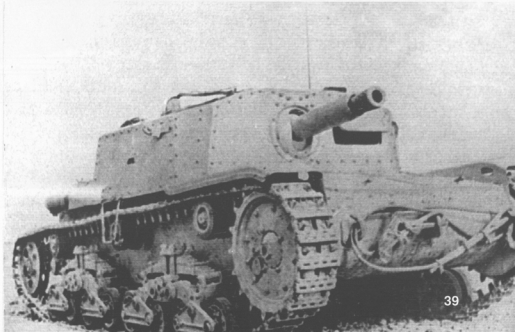
A *Semovente* rests between engagements in North Africa during the summer of 1942. This vehicle was painted overall Yellow Sand (FS20260) for desert operations. *Semoventi* assigned to the 2nd Battery sent to the theater received smaller tactical markings on the sides than earlier deployed vehicles.

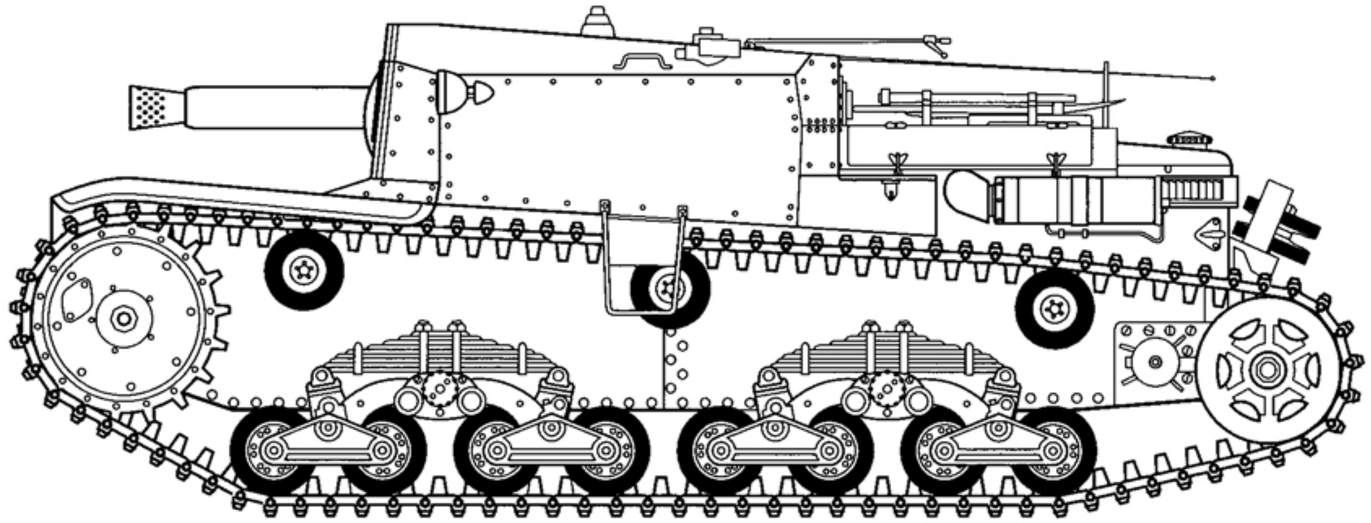
Organization of a *Semovente Gruppo* (assault gun battalion), 11 November 1942:

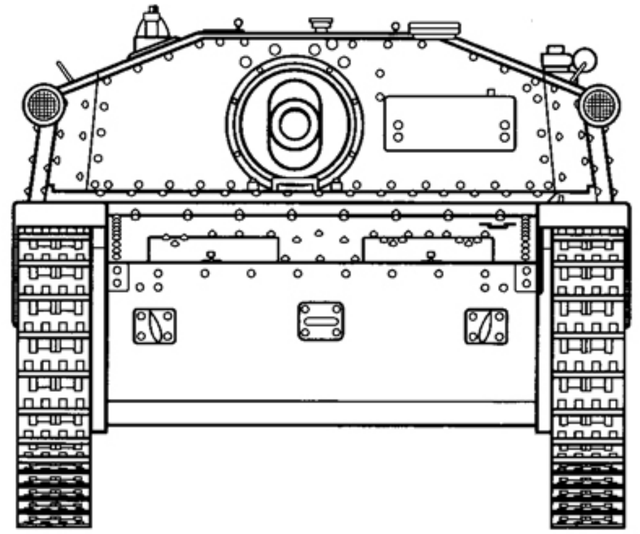
Battalion Headquarters (HQ), two batteries of four *Semoventi* per battery (eight *Semoventi* total in the *Gruppo*), four *Centro Radio* command tanks (including two for the battalion HQ), and an ammunition and supply unit.

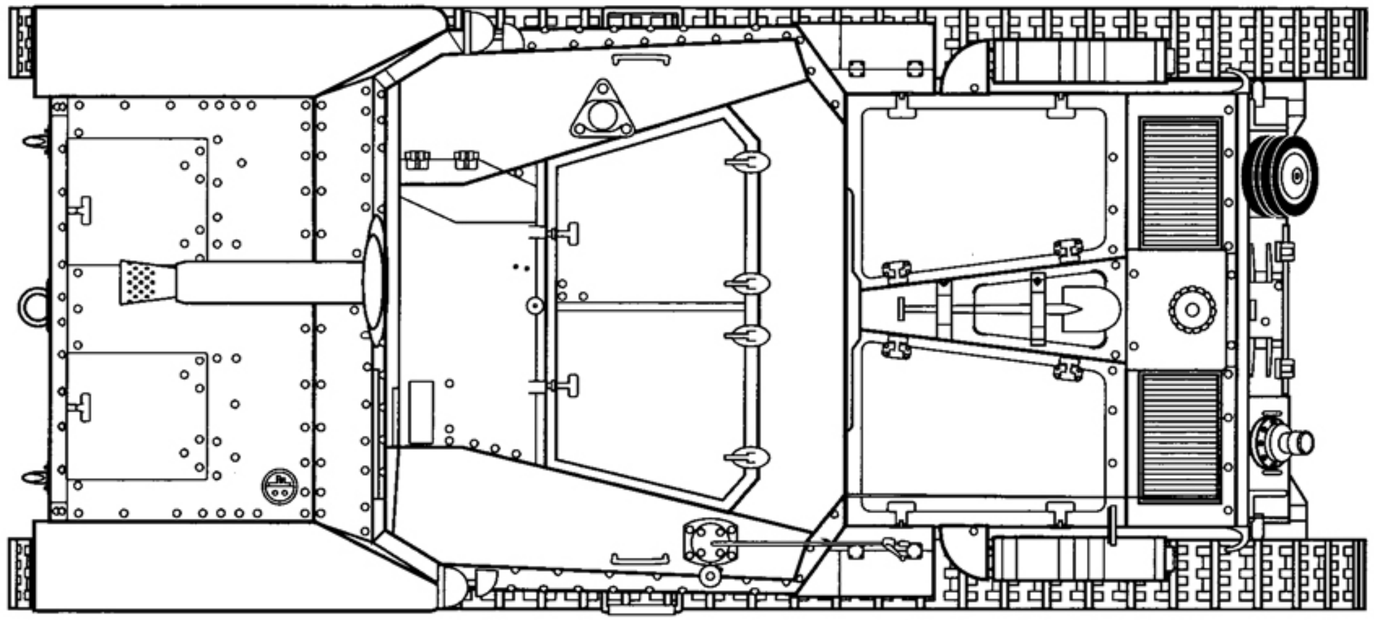
Personnel:.....17 officers, 19 Non-Commissioned Officers, and 184 privates.

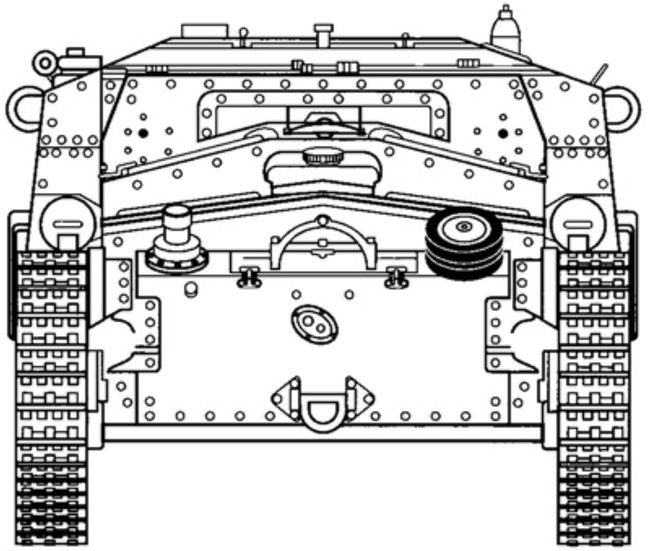
Support Equipment:.71 motor drivers, 16 tank drivers with four cars, 12 L 39 vehicles, 21 light trucks, two heavy trucks, two recovery trucks, one tanker, two tractors, two special trailers, seven motorcycles, nine two-seater motorcycles, three motor tricycles, seven machine guns, and 20 radio sets.











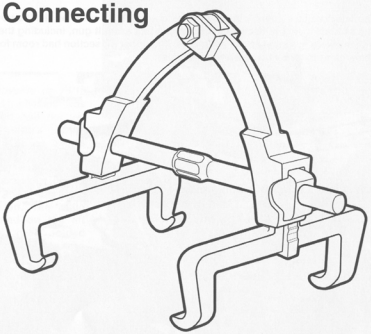
Fiat-Ansaldo *Semovente da 75/18* (M 13-40 Chassis) Specifications

Length:.....16 feet 1.5 inches (4.915 M)
Width:.....7 feet 5.8 inches (2.28 M)
Height:.....6 feet 0.1 inches (1.85 M)
Combat Weight:...28,880.1 pounds (13,100 KG)
Powerplant:.....One 125 HP Fiat SPA 8V liquid-cooled, V-8, diesel engine

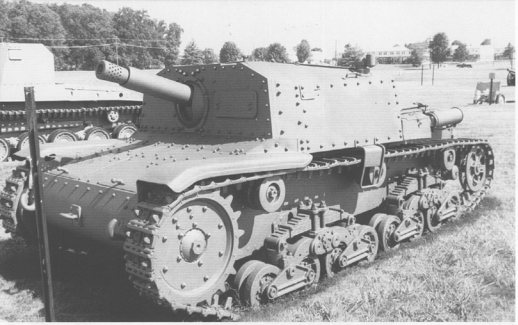
Armament:.....One hull-mounted 75MM L/18 gun with 44 rounds; one 8MM Breda Model 38 machine gun with 1104 rounds. (Early vehicles had one 6.5MM Breda Model 30 machine gun on the roof.)
Maximum Speed:...18.6 MPH (30 KMH)
Maximum Range:...130.5 miles (210 KM)
Crew:.....Three

An assault gun crew relaxes during a halt in the eastward advance of Axis forces in North Africa during the summer of 1942. The *Semovente da 75/18* had a three-man crew: commander/gunner, loader, and driver. Their uniforms were the same as Italian tank crews – black leather helmets and jackets with dark blue overalls.

Track Connecting Tool

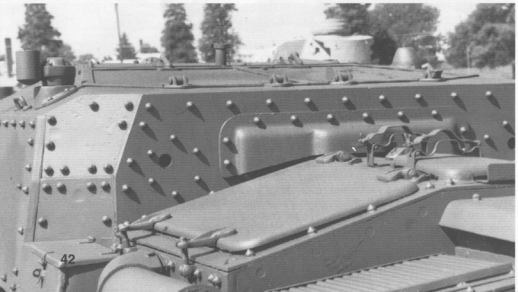


A loader stands in the fighting compartment of a *Semovente da 75/18* (RºE10 4449) in North Africa. A 6.5MM Breda Model 30 machine gun for anti-aircraft use was fitted to the fighting compartment roof. This weapon was replaced by the 8MM Breda Model 38 machine gun on later production *Semoventi*. The yellow and black assault gun tactical marking was repeated on the rear hull plate. A track connecting tool for installing track links was mounted on the aft hull, between the jack and the spare bogie wheel.



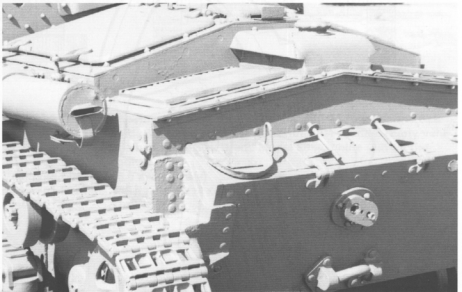
This *Semovente da 75/18* was captured by US forces during World War Two and is now displayed at the Aberdeen Proving Ground Museum in Maryland. These assault guns continued the extensive riveted construction used on the M tanks. Rivets from vehicle surfaces hit by enemy gunfire flew through the interior, often seriously injuring the crewmen inside. This vehicle's original Italian number plate was RoE10 4445.

The *Semovente da 75/18*'s fighting compartment was covered by two rear-opening hatches, each hatch equipped with two hinges. The ventilator on the aft fighting compartment wall allowed hot air to escape from the compartment. The empty rack atop the engine compartment held a shovel, a pickaxe, and a crowbar used for preparing fixed positions and for helping extricate disabled vehicles. The engine access hatches opened inward for engine maintenance and repair. The wing nuts used to fasten the hatches shut were missing from this display vehicle.

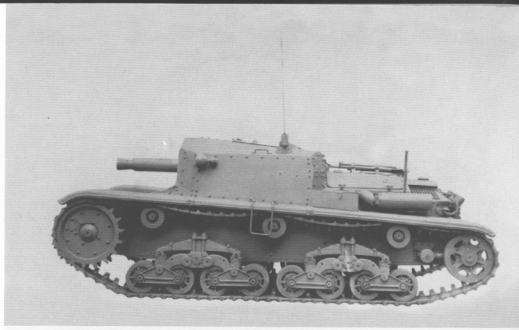


The *Semovente da 75/18* on display at the Aberdeen Proving Ground Museum lacks the equipment usually placed on the aft hull cover. These items included a jack on the hull cover's left side, a track connecting tool in the center, and a spare road wheel on the right side post. Fenders were not fitted over the rear half of the *Semovente da 75/18*'s running gear. This vehicle lacked the folding radio antenna usually mounted on the upper left superstructure and the Y-shaped antenna rest usually located between the port muffler and the engine deck.

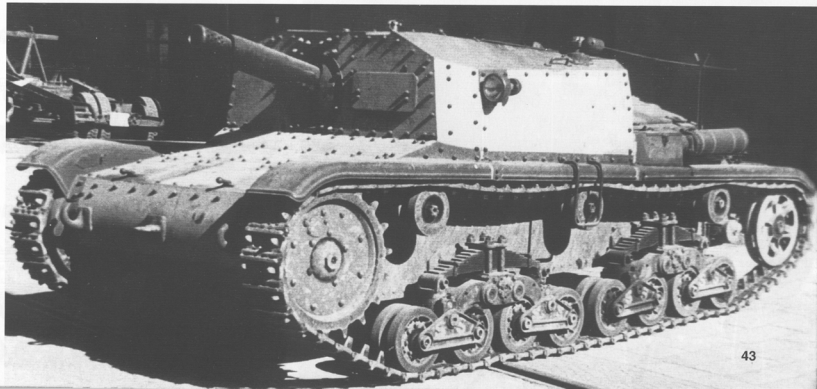
The later radiator cover with overhanging edges was used on the *Semovente da 75/18*. The M 13-40's engine deck was retained by this assault gun, including the exhaust pipes with mufflers mounted above the tracks. The upper aft section had room for a jack, a track connecting fixture, and spare road wheels.



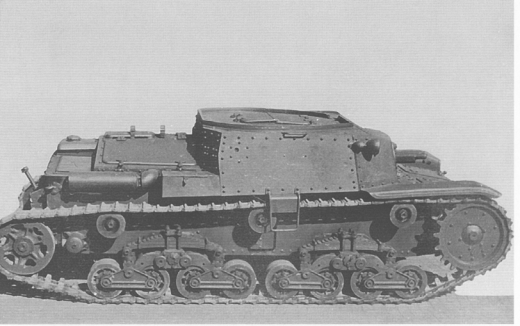
This *Semovente da 75/18* (RoE[1]D 6225) was parked on an Italian street sometime in 1943. The 'pepperbox' muzzle brake fitted to the 75MM gun diverted some gas expelled with the projectile when the gun was fired. This gas was turned to develop a forward thrust in order to counteract some of the gun's recoil, which otherwise moves the weapon backward. The vehicle was delivered to the 31st Tank Regiment at Siena, Italy on 31 May 1943. (Bundesarchiv)



This *Semovente da 75/18* used the M 14-41 chassis, which was identical to the M 13-40 chassis except for the later tank's more powerful SPA 15T engine. Some *Semovente da 75/18*s based on M 14-41s had smooth exhaust mufflers. The radiator grilles had transversal vents from hull number 1852.



This new *Semovente da 75/18* on the M 14-41 chassis was hastily produced and not yet painted at Ansaldo's Genoa works during 1942. The vehicle was later painted overall Yellow Sand (FS20260) before shipment to Tunisia and its use in combat by the *Centauro* Armored Division. The radio antenna mounted on the aft superstructure roof folded down and aft to allow the *Semovente* to clear obstacles above the vehicle. The antenna rested on a Y-shaped rest fitted to the engine deck. (Rosini)



The prototype *Carro Comando* (Command Vehicle) for *Semovente* units was built in 1941. Two 8MM Breda Model 38 machine guns were mounted in the starboard front superstructure. The hull top access doors were modified for production vehicles, which were fitted with RF 1 CA and RF 2 CA radio sets. The *Carro Comando* was finished overall Gray-Green (FS34159) with no markings. (AUSSME)

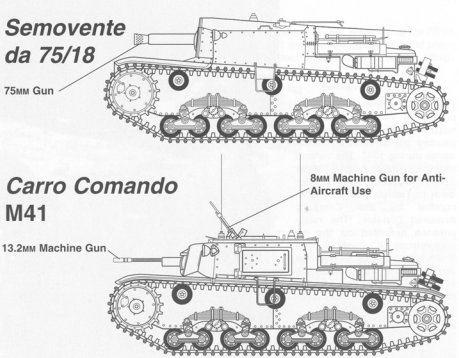
***Carro Comando* crews stand at attention in front of their vehicles in September of 1941, after the first two *Semovente* battalions had completed training in Italy. A 3.2 foot (1 M) rangefinder used for directing gunfire of *Semoventi* was mounted atop a *Carro Comando*. The vehicle was also fitted with a goniometer to determine the vehicle's orientation to true north.**

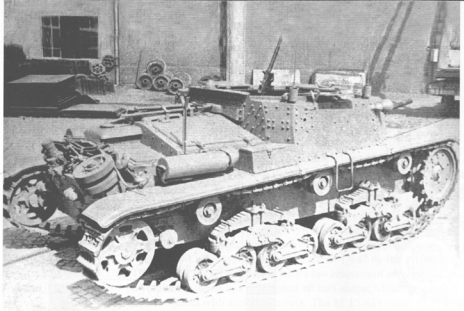
Carro Comando per Semoventi

The ***Carro Comando per reparto semovente da 75/18*** (Command vehicle for self-propelled guns) was a variant of the M 13-40 medium tank. Four of these command vehicles were assigned to each *Semovente* battalion. This vehicle deleted the 75MM main gun and the fighting compartment was covered with four outward-opening hatches. The *Carro Comando* had a crew of three or four: commander, driver, and one or two machine gunners. The vehicle was fitted with a goniometer – a direction finder incorporating a gyrocompass for establishing true north. The *Carro Comando* was also equipped with a 'scissors' telescope. A 3.2 foot (1 M) range finder was also standard equipment, while maps and charts were carried inside the vehicle. The radio equipment consisted of one RF 1 CA and one RF 2 CA radio sets. The radio antennas could be folded aft to clear obstacles above the vehicle and rested on Y-shaped rests placed on the hull rear.

The early *Carro Comandos* were fitted with two 8MM Breda Model 38 machine guns in the right front hull, in an identical mount to those found in the M 13-40 and M 14-41 tanks. In 1942, these weapons were replaced with one hull-mounted 13.2MM Breda Model 31 machine gun. The 6.5MM Breda Model 30 light machine gun provided for anti-aircraft use was replaced with one 8MM weapon.

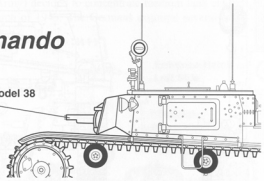
Total *Carro Comando* production amounted to 30 examples built during 1941 on the M 13-40 hull, 34 *Carro Comandos* on the M 14-41 hull in 1942, and over 45 vehicles on the M 14-41 hull in 1943.



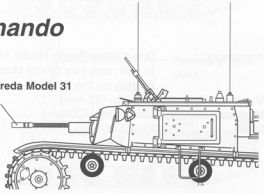


The *Carro Comando* vehicles mounted on the M 14-41 tank chassis replaced the twin 8mm hull machine guns with one 13.2mm Breda Model 31 machine gun. All four fighting compartment hatches opened outwards for easy crew access. An 8mm Breda Model 38 machine gun was mounted to provide defense against enemy aircraft. (Rosini)

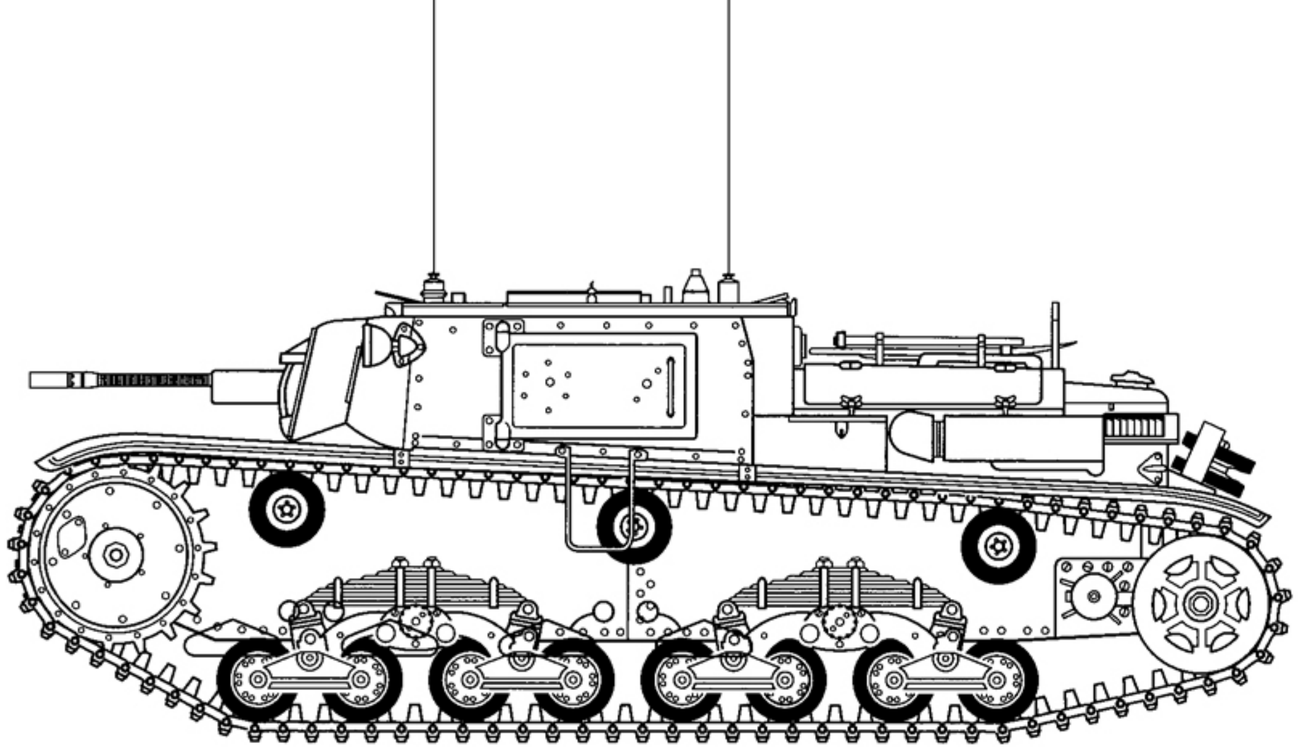
Early *Carro Comando* Upper Hull

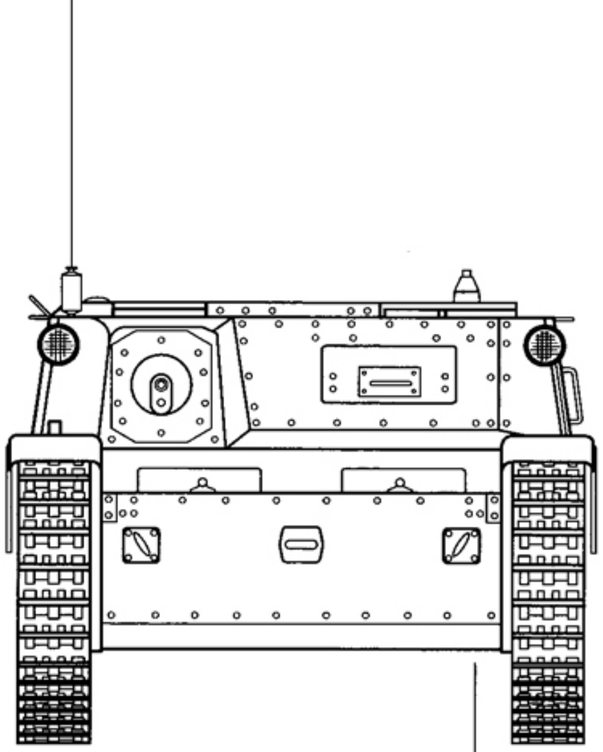


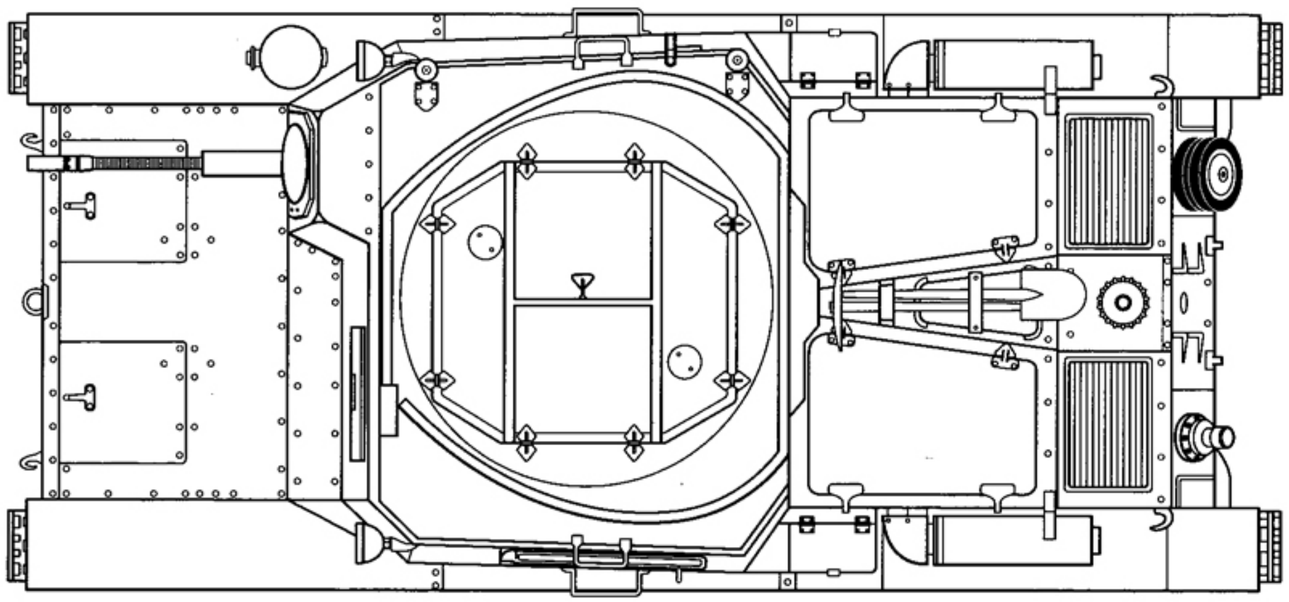
Later *Carro Comando* Upper Hull

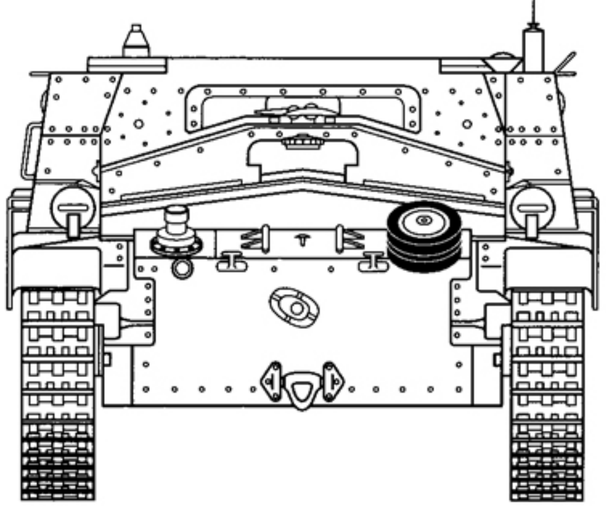


A *Carro Comando* based on the M 13-40 chassis (RE 4474) leads a battery of *Semovente da 75/18*s in Tripoli, Libya in January of 1942. These vehicles were assigned to the first *Semovente* unit deployed to North Africa. The early command vehicles used the twin 8mm hull machine gun mount used on the M 13-40 and M 14-41 tanks. A crewman stands up in the *Carro Comando*'s fighting compartment, with all four of its hatches opened. The pioneer tools placed on the near vehicle's engine deck were a pickaxe (top), a shovel (lower right), and a crowbar (lower left).









Fiat-Ansaldo *Carro comando per semovente* (M 14-41 Chassis) Specifications

Length:.....16 feet 1.5 inches (4.915 M)
Width:.....7 feet 5.8 inches (2.28 M)
Height:.....5 feet 11.9 inches (1.815 M)
Combat Weight:...27,557.3 pounds (12,500 KG)
Powerplant:.....One 145 HP Fiat SPA 15T liquid-cooled, V-8, diesel engine
Armament:.....One 13.2MM Breda Model 31 machine gun with 420 rounds in hull; one 8MM Breda Model 38 machine gun with 504 rounds on the roof.
Maximum Speed:...19.9 MPH (32 KMH)
Maximum Range:...124.3 miles (200 KM)
Crew:.....Four

M 15-42 Tank

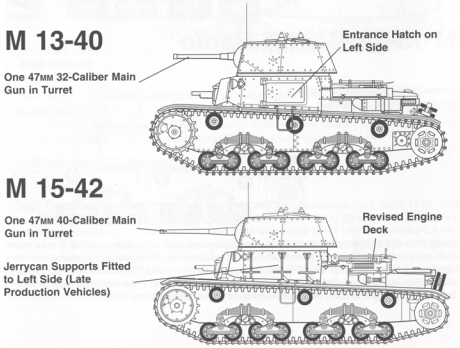
The *Carro Armato* (Army Tank) **M 15-42** was the final development of the M 13-40; however, this new tank was never fielded against the Allies. The Germans confiscated all available examples after Italy's armistice with the Allies was signed on 3 September 1943. Only a few M 15-42s were delivered to Italian tank units and these remained in service after the armistice and the immediate post-World War Two period.

The M 15-42 mounted a 47MM Ansaldo L40 gun in its turret. This weapon had a 30% greater muzzle velocity than the shorter 47MM L32 gun used on the earlier M 13-40 and M 14-41 tanks. The M 15-42 was also armed with three 8MM Breda Model 38 machine guns: one in the turret coaxial with the main gun, and two fitted in the right front hull. This tank carried 111 rounds of 47MM ammunition and 2640 rounds of 8MM ammunition. Two oval pistol ports were installed in the turret – one each on the left and right sides – while four circular pistol ports – two at the rear and one each on the left and right sides – were fitted to the superstructure.

The diesel engines fitted to earlier M tanks were replaced on the M 15-42 by the 190 HP Fiat SPA 15T gasoline engine. This change in fuel was due to Italy's low reserves of diesel fuel during this period. The new powerplant resulted in a redesigned aft hull shape, while the exhaust pipes on the aft hull surface were fitted with armored covers. The M 15-42's main fuel tank held 97 gallons (367 L), while the reserve tank capacity was 10.6 gallons (40 L).

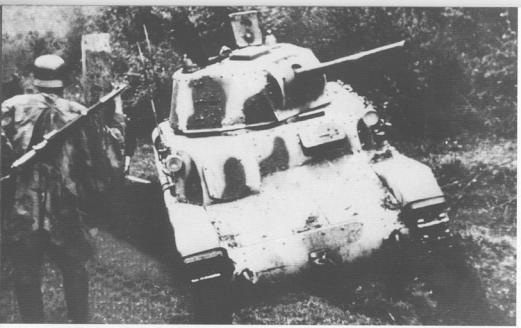
The crew access door was moved from the tank's left side to the right side and provision made for externally storing five jerrycans (fuel or water containers). After the initial production models were built, a smoke candle rack was added to the rear hull, starboard of the spare road wheel. The early radio antenna was replaced at the same time with another antenna, which automatically lowered when obstacles were present.

The *Regio Esercito* (Royal Italian Army) decided to concentrate medium tank chassis production on *Semovente* vehicles in March of 1943. The Germans acquired several M 15-42s


M 13-40
Entrance Hatch on Left Side
One 47MM 32-Caliber Main Gun in Turret
M 15-42
One 47MM 40-Caliber Main Gun in Turret
Revised Engine Deck
Jerrycan Supports Fitted to Left Side (Late Production Vehicles)

The M 15-42 was the final M (*Medio*; medium) tank developed for the *Regio Esercito*. This vehicle featured a 47MM Ansaldo L40 gun, 45MM front armor, and a 190 HP Fiat SPA 15T gasoline engine. The M 15-42 just entered *Regio Esercito* service when Italy reached an Armistice with the Allies on 3 September 1943. The radio antenna could be raised or lowered from inside the vehicle. This particular M 15-42 was repainted overall Olive Drab (FS34087) and served with the Italian Army after World War Two.

An M 15-42 (RoE[TO] 5052) moves at its full speed of 24.9 MPH (40 KMH) during an exercise in northwest Italy in May of 1943. This tank was assigned to the *Ariete II* Armored Division, formed after the original *Ariete* was destroyed during the Battle of El Alamein (23 October-4 November 1942) in Egypt. The M 15-42's crew has added tree branches for camouflage.

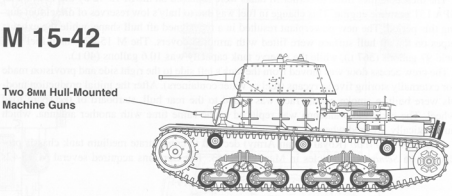


(Above) An M 15-42 *Centro Radio* believed to be assigned to the 7th *SS-Freiwilligen-Gebirgs-Division* (Volunteer Mountain Division) *'Prinz Eugen'* finds itself stuck in an northeastern Italian road during 1944. The Germans sprayed dark green and red brown patches over the original Italian sand finish. The *Centro Radio* variant lacked the standard M 15-42's bow mounted 8MM machine guns, which were removed in favor of extra radio equipment. The *'Prinz Eugen'* (Prince Eugene) Division consisted of ethnic Germans living in Yugoslavia and Rumania. This unit primarily saw action against anti-Axis partisans operating in northern Italy and Yugoslavia.

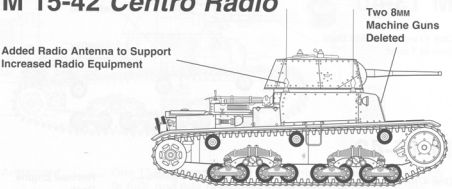
after the Italian armistice and used these tanks on anti-partisan operations in northern Italy and the Balkans. Ansaldo built over 219 M 15-42s prior to the shutdown of the medium tank production line in 1944. Some of these late production vehicles included new drive sprockets with four large guide teeth for improved track retention. Despite its improvements, the M 15-42 was an antiquated design, with sub-par automotive components and combat performance in comparison with other Allied and Axis tanks.

Fiat Ansaldo introduced the ***Semovente* 75/34** in late 1942. This vehicle fitted a longer barreled 75MM L34 gun to the M 15-42 hull. Production of the Semovente 75/34 reached 190 units before Italy's armistice with the Allies was signed. The ultimate Italian wartime self-propelled gun was the ***Semovente* 105/25**, introduced in April of 1943. This vehicle mounted a 25-caliber 105MM howitzer on the M 43 chassis – a slightly wider version of the M 15-42. The *Regio Esercito* ordered 494 *Semovente* 105/25s; however, only a handful were built before the armistice. The Germans confiscated the remaining vehicles after the armistice and employed the vehicles in their defense of Italy against the Allied forces.

M 15-42



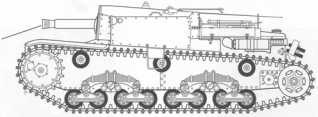
M 15-42 *Centro Radio*



(Left) This 1943 production M 15-42 is studied by two curious partisans after it was abandoned by a German SS unit somewhere in the Balkans. This version featured the new drive sprockets with four larger guide teeth on each sprocket. The four-color camouflage – two greens, brown, and Yellow Sand – was applied at the Ansaldo factory, with the Germans adding a white outline *Balkankreuz* to the turret sides.

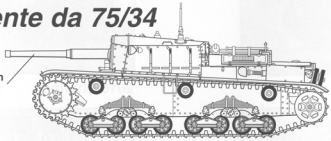
Semovente da 75/18

75MM 18-Caliber Gun on M 13-40 Chassis



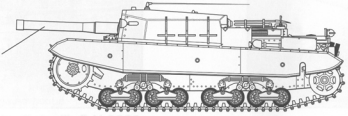
Semovente da 75/34

75MM 34-Caliber Gun on M 15-42 Chassis



Semovente da 105/25

105MM 25-Caliber Howitzer on M43 Chassis



Fiat-Ansaldo studied the development of special versions of the M tanks, including a self-propelled anti-aircraft vehicle armed with 20MM cannons; an armored recovery vehicle; a mine clearing vehicle; and a mobile workshop. None of these versions entered Italian service; however, the Germans used the recovery version of the M 15-42 tank in late 1943.

(Above) The *Regio Esercito* (Royal Italian Army) accepted the *Semovente da 75/34 mod. 42* into service on 29 April 1943. This vehicle used the M 15-42 tank chassis and was armed with a long-barreled 75MM Ansaldo L34 gun. This weapon had a muzzle velocity of 2047.2 feet (624 M) per second and a maximum range of 13,670.2 yards (12,500 M). The *Semovente da 75/34 mod. 42* could carry 42 rounds of 75MM Armor Piercing (AP) and High Explosive (HE) ammunition. Ansaldo produced 190 vehicles during 1942-43 and received orders for 500 *Semoventi* on the widened M 43 chassis; however, the latter order was not fulfilled due to Italy's 3 September 1943 Armistice with the Allies.

(Right) The *Semovente da 105/25* was standardized for production on 2 April 1943. This ultimate Italian Self-Propelled Gun (SPG) was armed with a 105MM 25-caliber howitzer in a welded superstructure on the M 43 hull. The M 43 was the M 15-42 hull widened by 0.4 feet (0.12 M) to 7.9 feet (2.4 M). The hull superstructure front was protected by 70MM of armor, while other armor plating on the vehicle ranged in thickness from 15MM to 50MM. This *Semovente da 105/25*'s finish had a Yellow Sand (FS20260) base with Red-Brown (FS20100) and Gray-Green (FS34159) patches. The Germans confiscated these SPGs after the Italian armistice and made good use of these vehicles against the Allied forces in Italy.

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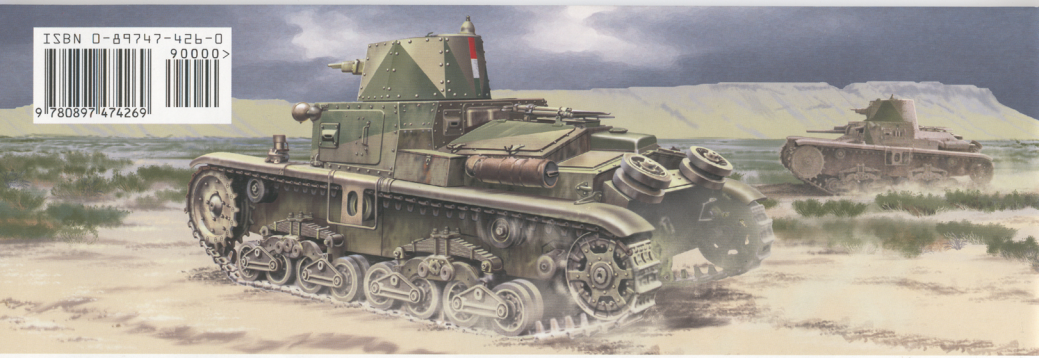
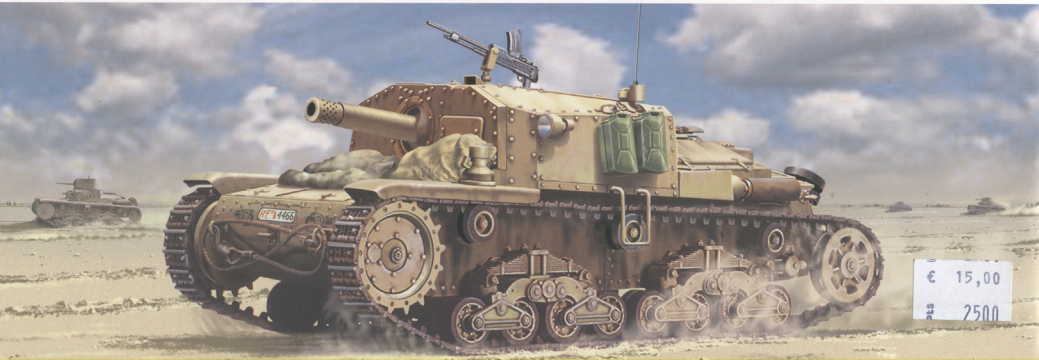


(Above) An M 11-39 tank of the 1st Tank Battalion moves towards Sidi Barrani, Egypt in September of 1940. The Italian national colors – red, white, and green – were painted on the turret rear as a recognition marking for friendly troops. The tank's Gray-Green (FS34159) and Yellow Sand (FS20260) color scheme differed slightly in pattern among the Battalion's M 11-39s.

(Below) A *Semovente da 75/18* assault gun (RºEᵀº 4466) assigned to the *Ariete* Armored Division advances on El Alamein, Egypt in the summer of 1942. Sandbags placed on the front hull provided additional protection to the vehicle. Painted on the front hull are the Division's two ram's heads and the anti-British motto *Dei tommy il terrore siam!* (We are the Tommies' terror!)



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